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Attorneys for Plaintiff
UNITED SATES DISTRICT COURT
EASTERN DISTRICT OF NEW YORK

CV 12-1169

----------X

CARSON OPTICAL, INC.

Plaintiff,

V.

HAWK IMPORTERS, INC.
SHYAM BAHETI and RAM BAHETI

Defendants,

----------X

Civil Action No.

COMPLAINT

JURY TRIAL DEMANDED

SPATT, J.

BOYLE M.J.

COMPLAINT

The plaintiff, Carson Optical, Inc., hereby files its complaint against the defendants, Hawk Importers, Inc., Shyam Baheti and Ram Baheti, as follows:

PARTIES

1. The plaintiff, Carson Optical, Inc. ("Carson") is, and at all relevant times has been, a corporation organized and existing under the laws of the State of New York, and maintains its principal place of business in Hauppauge, New York.

2. Carson markets and sells optical products throughout the country including within this Judicial District.

3. Upon information and belief, Hawk Importers, Inc. ("Hawk") is an Illinois corporation with its principal place of business at 2307 East Artesia Boulevard, Long Beach, California 90805. Upon information and belief, Hawk is engaged in, among other business activities, importing, selling, and distributing optical devices, including magnifiers.

4. Upon information and belief, Shyam Baheti is a California resident operating a business at 2307 East Artesia Boulevard, Long Beach, California 90805. Upon information and belief, Ram Baheti is a California resident operating a business at 2307 East Artesia Boulevard, Long Beach, California 90805. Upon information and belief, Shyam Baheti and Ram Baheti, acting as corporate officers and/or owners of Hawk, or otherwise having control over Hawk, are the masterminds behind the infringing activities described herein, and are responsible for directing the manufacture, distribution, offer for sale and sale of the infringing goods. Hawk, Shyam Baheti and Ram Baheti shall hereinafter be collectively referred to as "Hawk".

JURISDICTION AND VENUE

5. This is an action for, *inter alia,* violation of the Patent Laws of the United States of America, 35 U.S.C. § 271, et al. and for unfair competition in violation of the Lanham Act of 1946, as amended 15 U.S.C. § 1125(a).

6. The Court has jurisdiction over the subject matter of this action pursuant to 28 U.S.C. §§ 1331, 1338(a), 1338(b), and 1367(a) and 15 U.S.C. § 1121. Venue is proper within this judicial district pursuant to 28 U.S.C. §§1391(b), 1291(c), and 1400(b).

THE PLAINTIFFS' INTELLECTUAL PROPERTY RIGHTS

7. On September 12, 2000, the United States Patent and Trademark Office issued U.S. Patent No. 6,116,729 ("The '729 Patent"). A copy of the '729 Patent is attached hereto as Exhibit A.

8. Since September 27, 2011, Carson has been the assignee of the '729 Patent.

9. The exclusive right to market and sell products claimed by the '729 Patent is a valuable business asset of Carson.

10. Carson's commercial embodiment of the '729 Patent is a product that bears the trademark MAGNIVISOR DELUXE. An exemplar of the MAGNIVISOR DELUXE is attached hereto as Exhibit B.

11. On April 10, 2001, the United States Patent and Trademark Office issued U.S. Patent No. 6,215,601 B1 ("The '601 Patent"). A copy of the '601 Patent is attached hereto as Exhibit C.

12. Since September 27, 2011, Carson has been the assignee of the '601 Patent.

13. The exclusive right to market and sell products claimed by the '601 Patent is a valuable business asset of Carson.

14. Carson's commercial embodiment of the '601 Patent is a product that bears the trademark MAGNIVISOR DELUXE. An exemplar of the MAGNIVISOR DELUXE is attached hereto as Exhibit B.

15. On December 16, 2003, the United States Patent and Trademark Office issued U.S. Patent No. D483,779 S ("The '779 Patent"). A Copy of the '779 Patent is attached hereto as Exhibit D.

16. Since September 27, 2011, Carson has been the assignee of the '779 Patent.

17. The exclusive right to market and sell products claimed by the '779 Patent is a valuable business asset of Carson.

18. Carson's commercial embodiment of the '779 Patent is a product that bears the trademark MAGNIVISOR DELUXE. An exemplar of the MAGNIVISOR DELUXE is attached hereto as Exhibit B.

19. On October 16, 2007, the United States Patent and Trademark Office issued U.S. Patent No. 7,281,826 B2 ("The '826 Patent"). A Copy of the '826 Patent is attached hereto as Exhibit E.

20. Since September 27, 2011, Carson has been the assignee of the '826 Patent.

21. The exclusive right to market and sell products claimed by the '826 Patent is a valuable business asset of Carson.

22. Carson's commercial embodiment of the '826 Patent is a product that bears the trademark MAGNIVISOR DELUXE. An exemplar of the MAGNIVISOR DELUXE is attached hereto as Exhibit B.

23. On April 6, 2010, the United States Patent and Trademark Office issued U.S. Patent No. D613,437 S ("The '437 Patent"). A Copy of the '437 Patent is attached hereto as Exhibit F.

24. Since August 1, 2011, Carson has been the assignee of the '437 Patent.

25. The exclusive right to market and sell products claimed by the '437 Patent is a valuable business asset of Carson.

26. Hawk's infringing embodiment of the '437 Patent is a product that bears Hawk item No. of MG7639. An exemplar of the MG7639 is attached hereto as Exhibit G.

THE INFRINGING AND DECEPTIVE ACTS OF THE DEFENDANT

27. Hawk has imported, offered for sale, and sold a product that infringes the '729 Patent. An exemplar of this infringing product is attached as Exhibit H.

28. Hawk has also imported offered for sale, and sold a product that infringes the '601 Patent. An exemplar of this infringing product is attached as Exhibit H.

29. Hawk has also imported offered for sale, and sold a product that infringes the '779 Patent. An exemplar of this infringing product is attached as Exhibit H.

30. Hawk has also imported offered for sale, and sold a product that infringes the '826 Patent. An exemplar of this infringing product is attached as Exhibit H.

31. Hawk has also imported offered for sale, and sold a product that infringes the '437 Patent. An exemplar of this infringing product is attached as Exhibit I.

FIRST COUNT – INFRINGEMENT OF '729 PATENT

32. Paragraphs 1 through 31 are hereby incorporated by reference as if fully set forth herein.

33. By its import, marketing, offering for sale and sale of its item No. MG9025, Hawk has infringed and continues to infringe the '729 Patent in violation of 35 U.S.C. § 271(a).

34. Hawk's infringement was and is willful, purposeful and/or deliberate, and has caused substantial harm to Carson.

35. Carson has suffered damages in the form of, *inter alia,* a diversion of trade and lost profits.

36. Carson has been and will continue to suffer irreparable harm, unless Hawk is enjoined by this Court.

37. This is an exceptional case, entitling the Plaintiff to the recovery of reasonable attorneys' fees and costs in perusing this matter to judgment.

SECOND COUNT – INFRINGEMENT OF '729 PATENT

38. Paragraphs 1 through 31 are hereby incorporated by reference as if fully set forth herein.

39. Hawk's infringing activity was willful, purposeful and/or deliberate, and has caused substantial harm to Carson.

40. Carson has suffered damages in the form of, *inter alia*, a diversion of trade and lost profits.

41. Hawk actively induced (and continues to induce) and contributed (and continues to contribute) to the infringement of the '729 Patent in violation of 35 U.S.C. §§ 271(b) and (c) to secure payments on sales to its customers.

42. This is an exceptional case, entitling the Plaintiff to the recovery of reasonable attorneys; fees and costs in pursuing this matter to judgment.

THIRD COUNT – INFRINGEMENT OF '601 PATENT

43. Paragraphs 1 through 31 are hereby incorporated by reference as if fully set forth herein.

44. By its import, marketing, offering for sale and sale of its item No. MG9025, Hawk has infringed and continues to infringe the '601 Patent in violation of 35 U.S.C. § 271(a).

45. Hawk's infringement was and is willful, purposeful and/or deliberate, and has caused substantial harm to Carson.

46. Carson has suffered damages in the form of, *inter alia,* a diversion of trade and lost profits.

47. Carson has been and will continue to suffer irreparable harm, unless Hawk is enjoined by this Court.

48. This is an exceptional case, entitling the Plaintiff to the recovery of reasonable attorneys' fees and costs in perusing this matter to judgment.

FOURTH COUNT – INFRINGEMENT OF '601 PATENT

49. Paragraphs 1 through 31 are hereby incorporated by reference as if fully set forth herein.

50. Hawk's infringing activity was willful, purposeful and/or deliberate, and has caused substantial harm to Carson.

51. Carson has suffered damages in the form of, *inter alia*, a diversion of trade and lost profits.

52. Hawk actively induced (and continues to induce) and contributed (and continues to contribute) to the infringement of the '601 Patent in violation of 35 U.S.C. §§ 271(b) and (c) to secure payments on sales to its customers.

53. This is an exceptional case, entitling the Plaintiff to the recovery of reasonable attorneys; fees and costs in pursuing this matter to judgment.

FIFTH COUNT – INFRINGEMENT OF '779 PATENT

54. Paragraphs 1 through 31 are hereby incorporated by reference as if fully set forth herein.

55. By its import, marketing, offering for sale and sale of its item No. MG9025, Hawk has infringed and continues to infringe the '779 Patent in violation of 35 U.S.C. § 271(a).

56. Hawk's infringement was and is willful, purposeful and/or deliberate, and has caused substantial harm to Carson.

57. Carson has suffered damages in the form of, *inter alia,* a diversion of trade and lost profits.

58. Carson has been and will continue to suffer irreparable harm, unless Hawk is enjoined by this Court.

59. This is an exceptional case, entitling the plaintiffs to the recovery of reasonable attorneys' fees and costs in perusing this matter to judgment.

SIXTH COUNT – INFRINGEMENT OF '779 PATENT

60. Paragraphs 1 through 31 are hereby incorporated by reference as if fully set forth herein.

61. Hawk's infringing activity was willful, purposeful and/or deliberate, and has caused substantial harm to Carson.

62. Carson has suffered damages in the form of, *inter alia*, a diversion of trade and lost profits.

63. Hawk actively induced (and continues to induce) and contributed (and continues to contribute) to the infringement of the '779 Patent in violation of 35 U.S.C. §§ 271(b) and (c) to secure payments on sales to its customers.

64. This is an exceptional case, entitling the Plaintiff to the recovery of reasonable attorneys; fees and costs in pursuing this matter to judgment.

SEVENTH COUNT – INFRINGEMENT OF '826 PATENT

65. Paragraphs 1 through 31 are hereby incorporated by reference as if fully set forth herein.

66. By its import, marketing, offering for sale and sale of its item No. MG9025, Hawk has infringed and continues to infringe the '826 Patent in violation of 35 U.S.C. § 271(a).

67. Hawk's infringement was and is willful, purposeful and/or deliberate, and has caused substantial harm to Carson.

68. Carson has suffered damages in the form of, *inter alia,* a diversion of trade and lost profits.

69. Carson has been and will continue to suffer irreparable harm, unless Hawk is enjoined by this Court.

70. This is an exceptional case, entitling the plaintiffs to the recovery of reasonable attorneys' fees and costs in perusing this matter to judgment.

EIGHTH COUNT – INFRINGEMENT OF '826 PATENT

71. Paragraphs 1 through 31 are hereby incorporated by reference as if fully set forth herein.

72. Hawk's infringing activity was willful, purposeful and/or deliberate, and has caused substantial harm to Carson.

73. Carson has suffered damages in the form of, *inter alia*, a diversion of trade and lost profits.

74. Hawk actively induced (and continues to induce) and contributed (and continues to contribute) to the infringement of the '826 Patent in violation of 35 U.S.C. §§ 271(b) and (c) to secure payments on sales to its customers.

75. This is an exceptional case, entitling the Plaintiff to the recovery of reasonable attorneys; fees and costs in pursuing this matter to judgment.

NINTH COUNT – INFRINGEMENT OF '437 PATENT

76. Paragraphs 1 through 31 are hereby incorporated by reference as if fully set forth herein.

77. By its import, marketing, offering for sale and sale of its item No. MG7639, Hawk has infringed and continues to infringe the '437 Patent in violation of 35 U.S.C. § 271(a).

78. Hawk's infringement was and is willful, purposeful and/or deliberate, and has caused substantial harm to Carson.

79. Carson has been and will continue to suffer irreparable harm, unless Hawk is enjoined by this Court.

80. This is an exceptional case, entitling the Plaintiff to the recovery of reasonable attorneys' fees and costs in perusing this matter to judgment.

TENTH COUNT – INFRINGEMENT OF '437 PATENT

81. Paragraphs 1 through 31 are hereby incorporated by reference as if fully set forth herein.

82. Hawk's infringing activity was willful, purposeful and/or deliberate, and has caused substantial harm to Carson.

83. Hawk actively induced (and continues to induce) and contributed (and continues to contribute) to the infringement of the '437 Patent in violation of 35 U.S.C. §§ 271(b) and (c) to secure payments on sales to its customers.

84. This is an exceptional case, entitling the Plaintiff to the recovery of reasonable attorneys; fees and costs in pursuing this matter to judgment.

ELEVENTH COUNT – UNFAIR COMPETITION

85. Paragraphs 1 through 31 are hereby incorporated by reference as if fully set forth herein.

86. Hawk's acts and conduct, alone and/or in combination, constitute unfair competition under the Lanham Act of 1946, as amended 15 U.S.C . § 1125(a).

87. Hawk has engaged in acts and/or conduct, alone or in combination, constituting unfair competition by, among other things:

a. Copying and reproducing Carson's products, including Carson's MAGNIVISOR DELUXE™;

b. Systematically infringing Carson's intellectual property rights, including the '729 Patent, '601 Patent, '779 Patent, '826 Patent, and '437 Patent, and thereby unfairly competing with Carson; and

88. Hawk's acts of unfair competition, as detailed above, have damaged and will continue to damage and cause irreparable harm to the business and goodwill of Carson unless restrained by this Court.

89. Hawk's acts have caused harm and loss to Carson, entitling it to the recovery of damages.

PRAYER FOR RELIEF

WHEREFORE, Carson prays for the following.

1. An Order enjoining Hawk from importing, marketing, distributing, offering for sale and selling any products that infringe the '729 Patent.

2. An Order enjoining Hawk from inducing or contributing to the infringement of the '729 Patent.

3. An Order enjoining Hawk from importing, marketing, distributing, offering for sale and selling any products that infringe the '601 Patent.

4. An Order enjoining Hawk from inducing or contributing to the infringement of the '601 Patent.

5. An Order enjoining Hawk from importing, marketing, distributing, offering for sale and selling any products that infringe the '779 Patent.

6. An Order enjoining Hawk from inducing or contributing to the infringement of the '779 Patent.

7. An Order enjoining Hawk from importing, marketing, distributing, offering for sale and selling any products that infringe the '826 Patent.

8. An Order enjoining Hawk from inducing or contributing to the infringement of the '826 Patent.

9. An Order enjoining Hawk from importing, marketing, distributing, offering for sale and selling any products that infringe the '437 Patent.

10. An Order enjoining Hawk from inducing or contributing to the infringement of the '437 Patent.

11. An Order impounding and/or destroying all infringing products.

12. An award of money damages pursuant to 35 U.S.C. § 284, 35 U.S.C. § 289, and 15 U.S.C. § 1117.

13. Multiple damages pursuant to 35 U.S.C. § 284 and 15 U.S.C. § 1117.

14. An award of attorneys' fees and costs pursuant to 35 U.S.C. § 284 and 15 U.S.C. § 1117.

15. Prejudgment Interest.

16. Punitive damages.

17. Costs.

18. Such other relief as this Court deems just and proper.

JURY DEMAND

Carson hereby requests a trial by jury of any issue so triable as of right pursuant to Rule 38(b) of the Federal Rules of Civil Procedure.

Dated: New York, New York
March 8, 2012

PRYOR CASHMAN LLP

By: _____
Robert J. deBrauwere
Eric D. Dowell
7 Times Square
New York, New York 10036
(212) 421-4100
Attorneys for Plaintiff

A

US006116729A

United States Patent [19]

Huang

[11] **Patent Number: 6,116,729**

[45] **Date of Patent: Sep. 12, 2000**

[54] **HEAD MAGNIFYING GLASS**

[75] Inventor: **Tsung-Hui Huang**, Tai Pei, Taiwan

[73] Assignee: **GEM Optical Co., Ltd.**, Taichung Hsien, Taiwan

[21] Appl. No.: **09/376,842**

[22] Filed: **Aug. 18, 1999**

[30] **Foreign Application Priority Data**

Sep. 28, 1998 [CN] China 98 2 07452

[51] **Int. Cl.**[7] **G02C 1/00**

[52] **U.S. Cl.** **351/41**; 351/158

[58] **Field of Search** 351/41, 158, 57; 2/452, 453

[56] **References Cited**

U.S. PATENT DOCUMENTS

1,741,264	12/1929	Wappler	351/158
3,945,712	3/1976	Crock et al.	351/41
5,715,030	2/1998	Quaresima	351/158
5,767,932	6/1998	Gordon	351/158

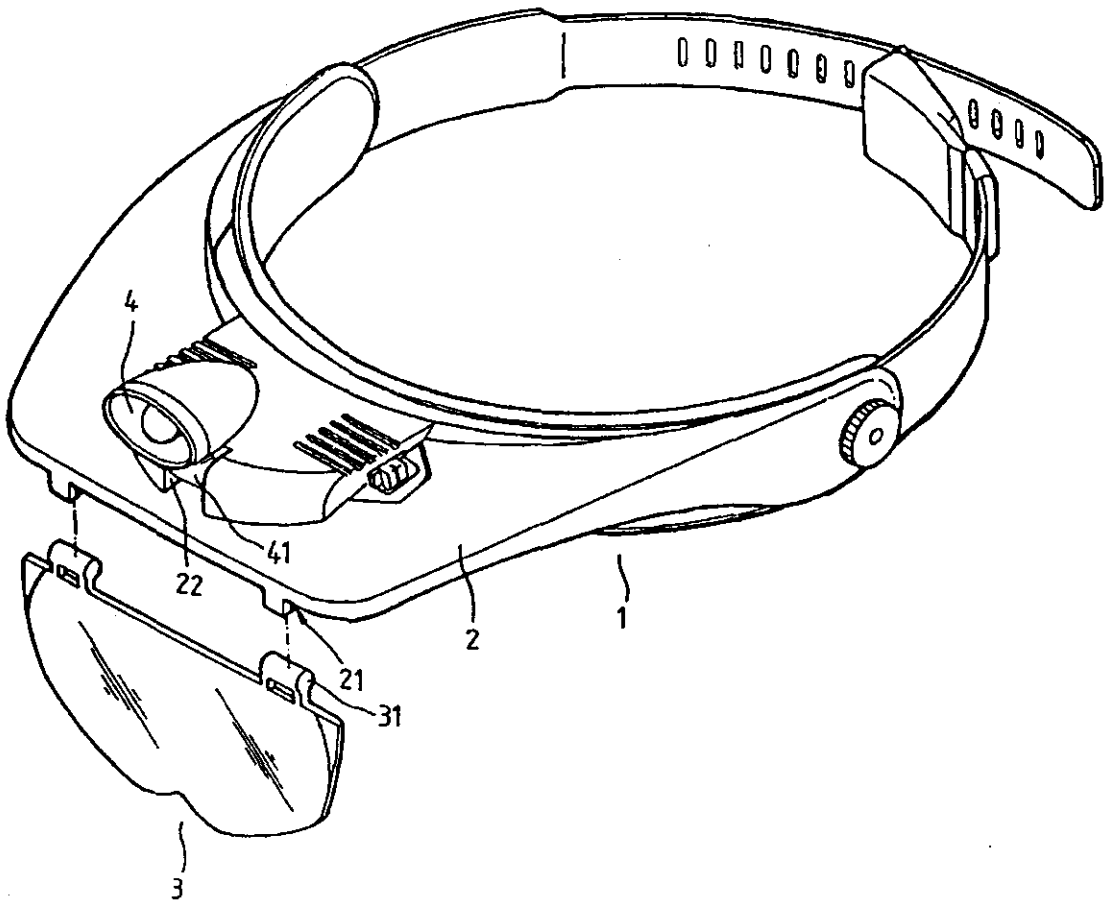
Primary Examiner—Huy Mai

Attorney, Agent, or Firm—J. C. Patents; Jiawei Huang

[57] **ABSTRACT**

A modified magnifying glass with more than one clamps built on the bottom of the fixer of head magnifying glass for clamping tenons stretching out from the top of magnifying plate. A pivoting seat is set up on the top of said fixer and a revolving bracket set up on the bottom of illuminating body is pivoted at said pivoting seat. It is convenient for the users to replace magnifying plates of different magnification according to needs and magnifying glass can be turned up to vanish from user's sight while it is not in use. Besides, the angle of depression and the angle of elevation of illuminating body can be adjusted by turning the revolving bracket pivoted in the pivoting seat to allow light directly irradiates in use and practical effect are realized.

9 Claims, 6 Drawing Sheets



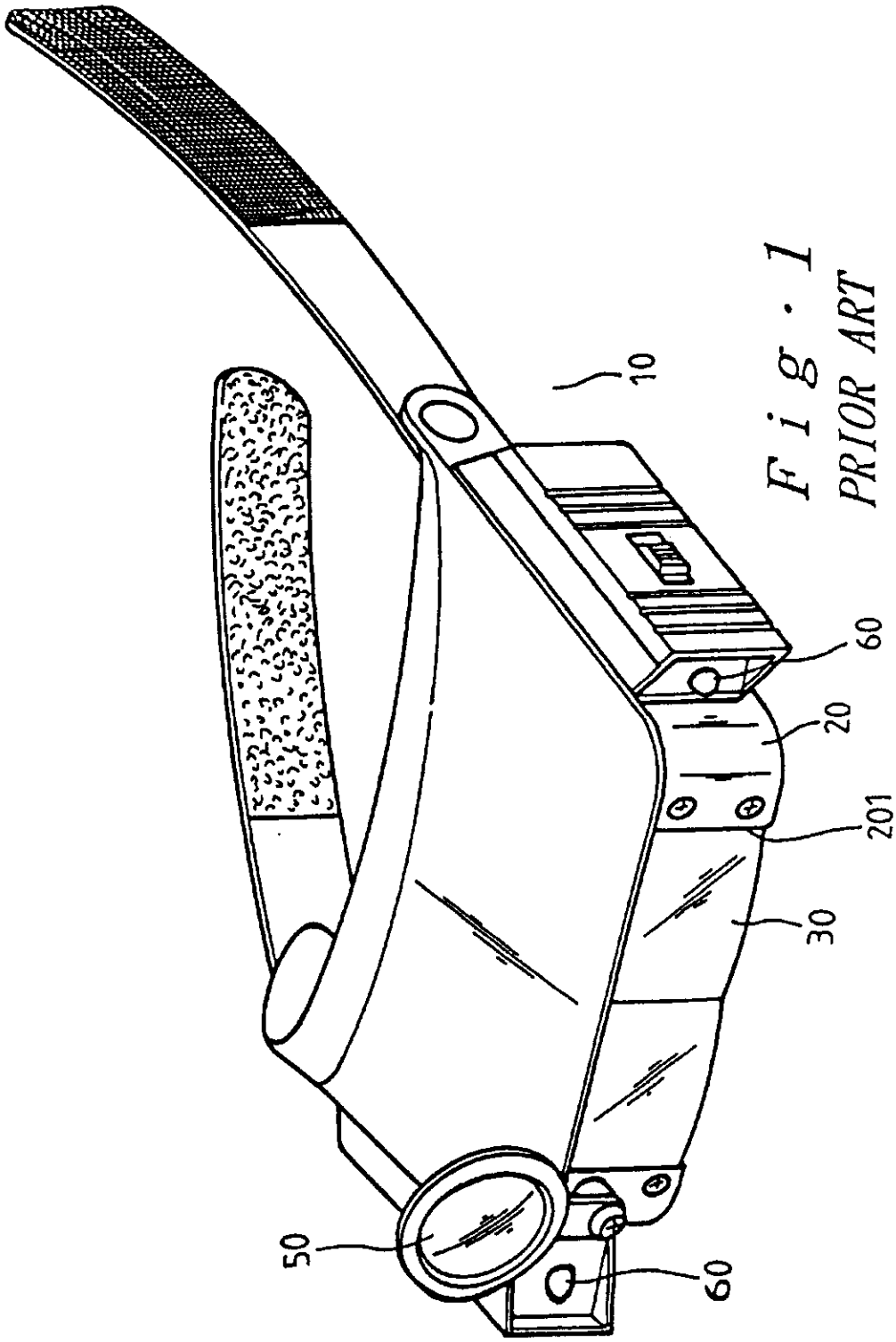


Fig. 1
PRIOR ART

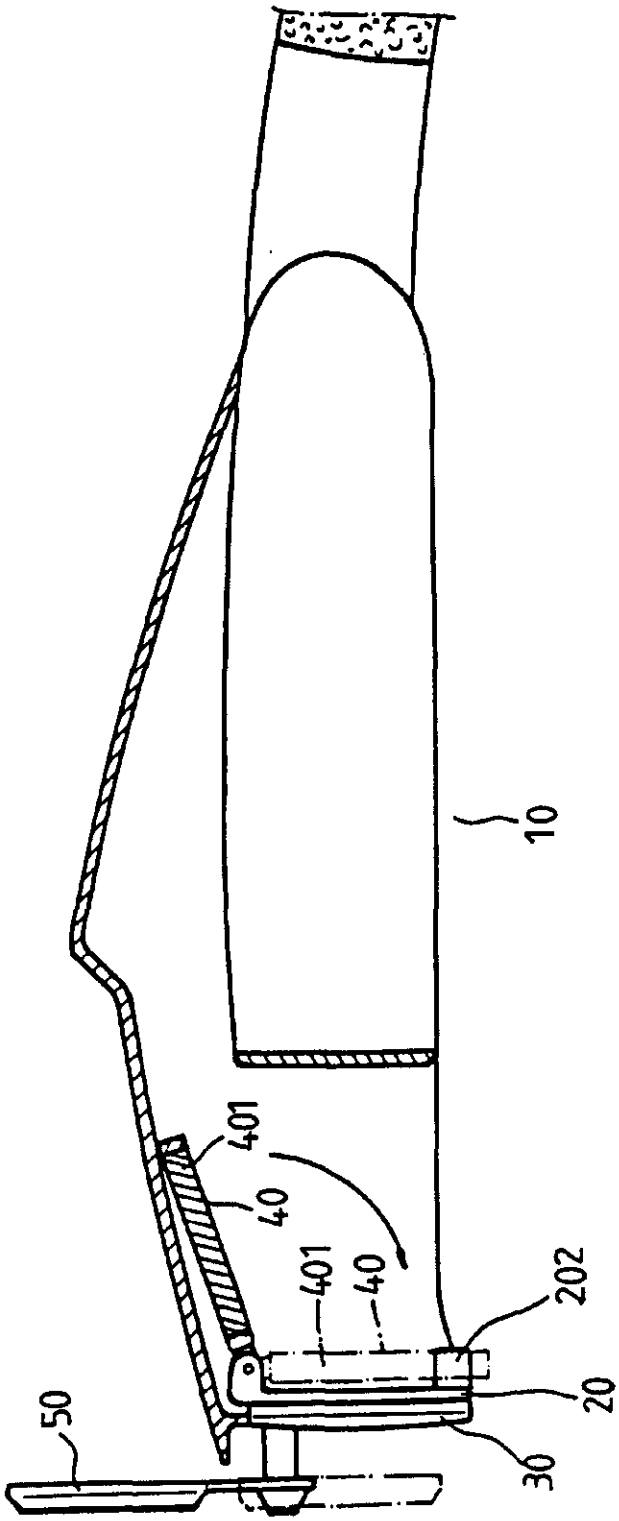


Fig. 2
PRIOR ART

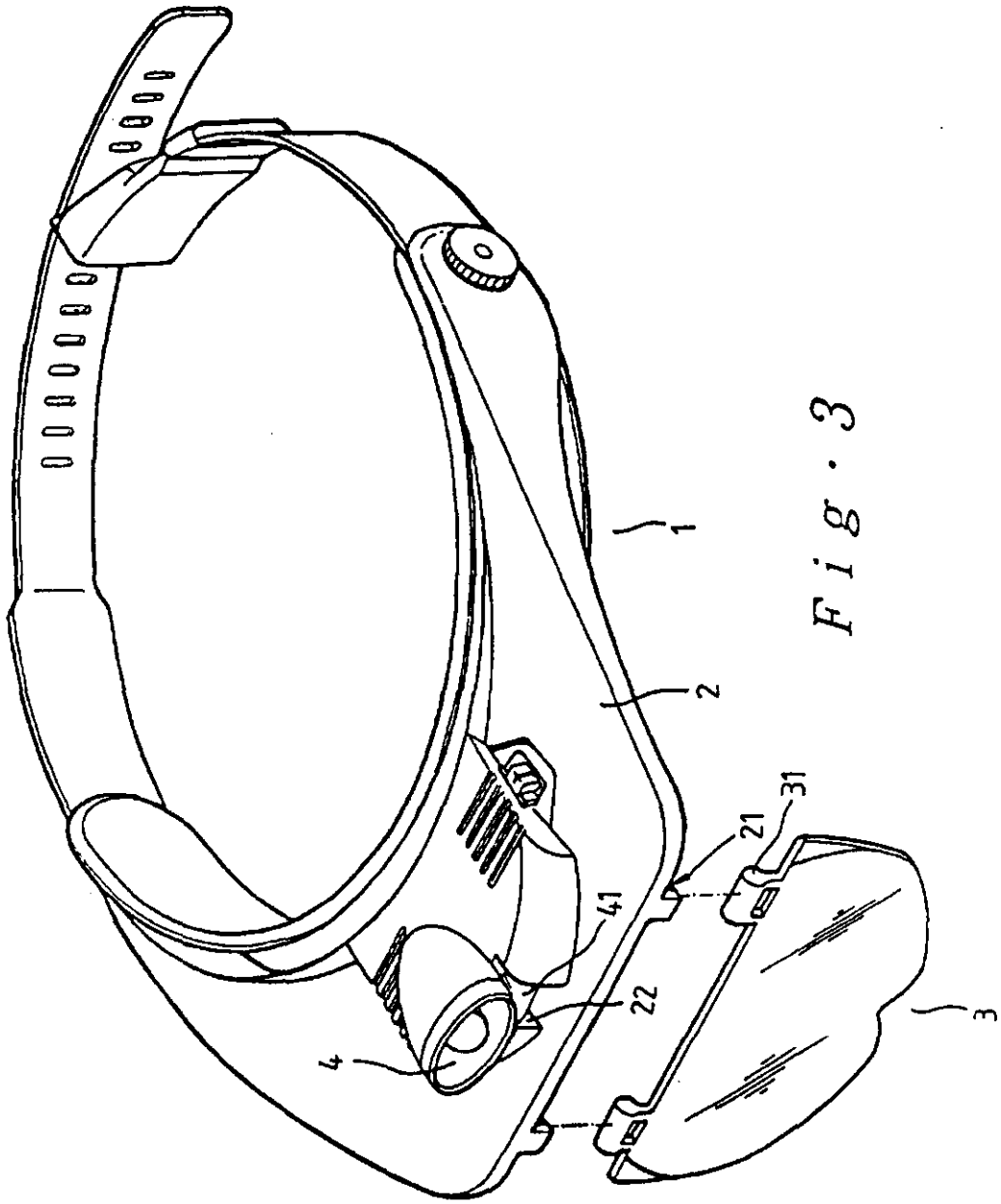


Fig. 3

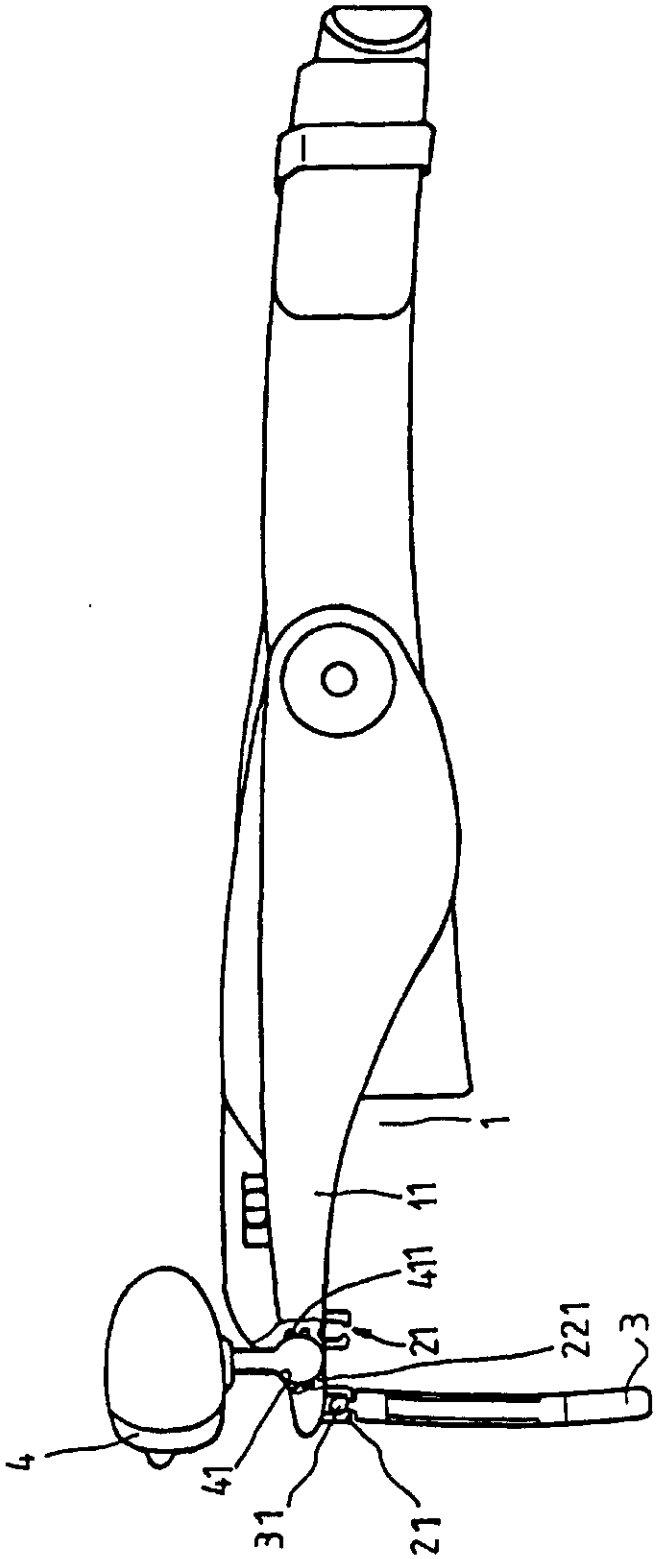


Fig. 4

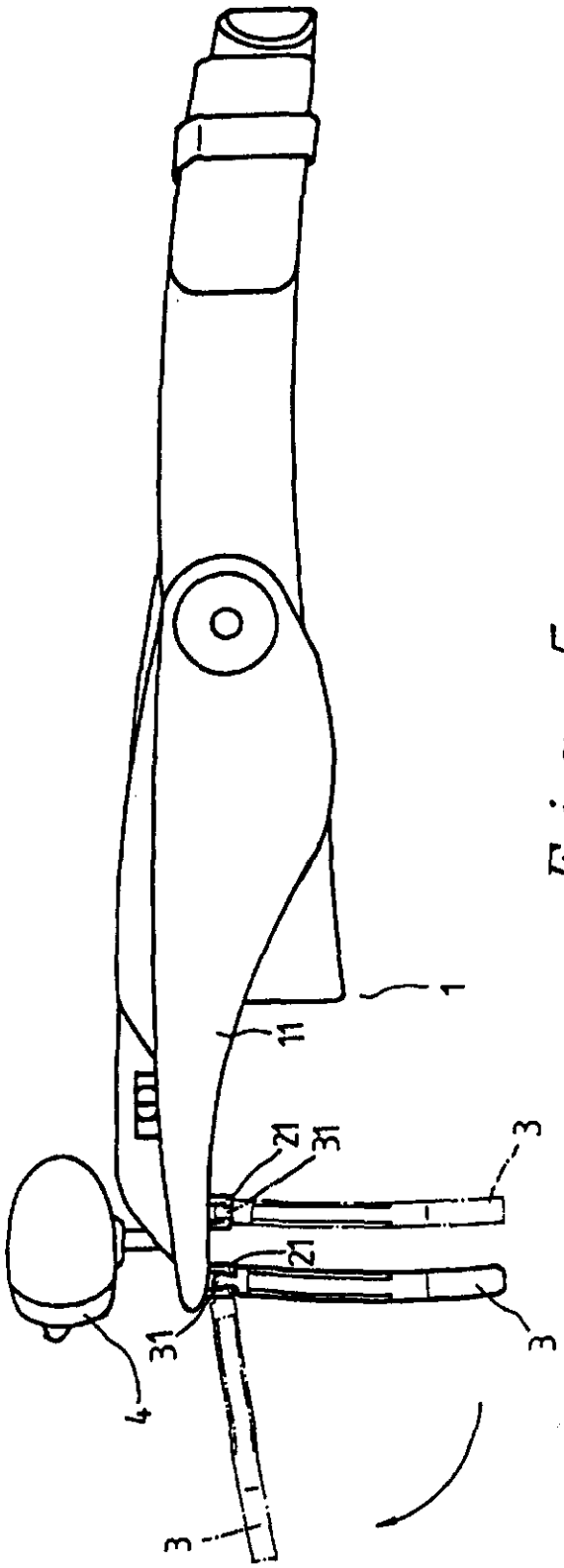


Fig. 5

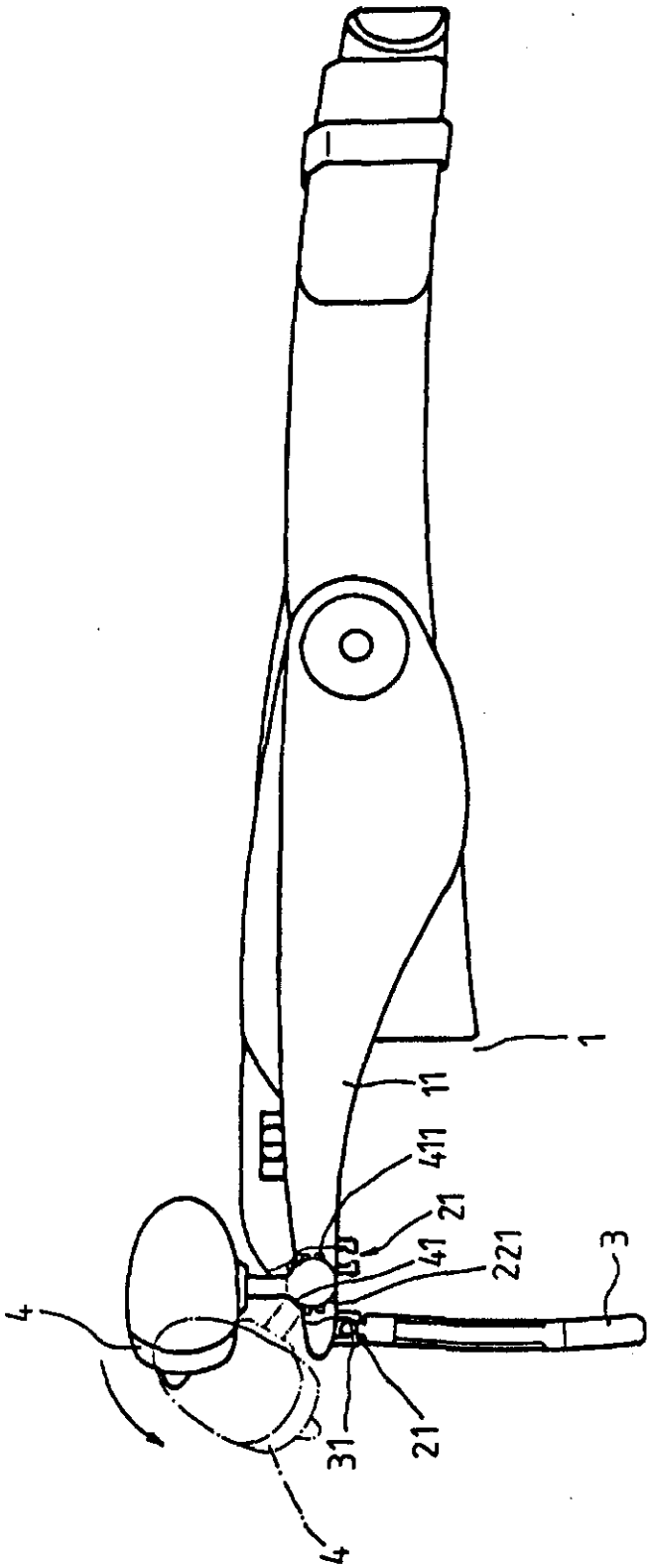


Fig. 6

HEAD MAGNIFYING GLASS

BACKGROUND OF THE INVENTION

The present invention related to a head magnifying glass, and more particularly a construction of head magnifying glass, wherein magnifying plate can easily be replaced and the angle of illuminating can be adjusted in accordance with the needs of user.

With the quick development of industries in recent years, every industry gradually tends to the practical development of reducing volume and enabling all-round functions of products. Almost any industry such as precise electronic industry, precise mould manufacturing industry, seal carving industry, composing and typing industry, precise spring manufacturing industry, etc, all develop towards said direction without exception. In the manufacturing of these precise industries, workers have to use head magnifying glass to magnify work pieces for easy processing. FIGS. **1** and **2** show a conventional head magnifying glass **10**, wherein a slot **201** is carved out in front of fixer **20** and a magnifying glass plate **30** is locked up with its sides seated in the sides of slot **201** to fix said magnifying plate in slot **201**. Again, on the inner side of slot **201** is set up a movable plate **40** able to revolve and on said movable plate **40** a magnifying plate **401** is fixed. When said movable plate **40** is turned down, it is buttoned up by buttoning seat **202** on the inner side of slot **201**. On the outer side of slot **201** of fixer **20** there is a revolving magnifying plate **50** which, while in use, can be turned down to the front of magnifying plate **30**, and when it is not in use, it can be turned up to depart from the front of magnifying plate **30**. Moreover, an illuminating body **60** is placed on each side of fixer **20** respectively, and when head magnifying glass is used, by utilizing the three magnifying plates **30**, **401** and **50** to adjust magnification and illuminating bodies **60** as supplementary illumination, the magnification of work piece as well as the illumination onto the processing parts of work piece is realized. Although the above-mentioned object can be carried out by such construction, there are shortcomings in use yet as in the following:

1. As magnifying glass plates **30**, **401** and **50** are fixed on fixer **20** in different ways, magnification is bound to be the result of the composition of the three and it is unable to replace magnifying glass place in accordance with user's needs. As a result, magnification can only be bound within certain definite magnifications, leading to the limitation of magnification;
2. Furthermore, although magnifying plates **401** and **50** can be turned up and/or down according to user's selection and compose with magnifying plate **30**, when the user does not need magnifying plate, his Sight is still blocked by magnifying plate **30** and is still magnified because said magnifying plate **30** is fixed in front of the sight of user. As a result, in order to get his sight depart from the magnifying scope, the user has to take off the whole set of head magnifying glass, and it is sure that this is inconvenient for use.
3. As magnifying plate **30** is locked up at the lateral side of slot **201** of fixer **20**, both of its sides will be blocked by the edges of slot **201**, the range of sight is thus limited so that the 3-dimentional visual sense of object is worsened.
4. As the illumination of illuminating bodies **60** comes form both sides of fixer **20**, its light can not be concentrated into a light beam illuminating upon the processing part of working piece and thus the illumination effect is lowered. Besides, since illuminating bodies **60** are fixed at both sides of fixer **20**, they can not be adjusted to turn up and down and/or to the left and right so that the illuminating part may not be the required part of user, and the user can not make any adjustment for this, resulting in another difficulty in use.

SUMMARY OF THE INVENTION

The major object of the present invention is to provide a modified head magnifying glass to resolve the above-mentioned problem, wherein by utilizing the clamps set up on the bottom of fixer clamping up the tenons on the top of magnifying plate of different magnification. Again, the magnifying plate can be turned up when it is not used for easy selection of the user. Magnifying plate is suspended with clamps, its side edges appear empty without frame so that the wide visual scope is attained and the stereoscopic visual scene is improved as well

The second object of the present invention is to provide a modified head magnifying glass, wherein the clamps on the fixer can clamp up two magnifying plates, one of which being in the front and the other in the rear, therefore the magnification is the composition of both of them and the adjustment of magnification at will is achieved. The other object of the present invention is to provide a modified head magnifying glass, wherein said illuminating body is pivoted at the pivoted seat of fixer by utilizing a revolving bracket made on its bottom so that the angle of depression and/or elevation can be adjusted by turning the revolving bracket. At the same time, by utilizing the pivoting connection between the illuminating body and the revolving bracket, the illuminating body can also be turned to the right or to the left to change the illuminated position of the light of illuminating body.

The object of the present invention is carried out in the following way:

A modified head magnifying glass, wherein more than one clamps are set up on the bottom of the fixer of head magnifying glass for clamping the tenons stretching out from the top of magnifying plate; a pivoting seat is established on the top of said fixer and a revolving bracket on the bottom of an illuminating body is pivoted at said pivoting seat to allow illuminating body to adjust its depression and/or elevation angle by turning the revolving bracket in the pivoting seat.

The clamps on the bottom of said fixer face each other in pairs, and the number of tenons on the top of magnifying plate matches that of clamps facing each other.

Several slide-resistant strips are attached to the surface of the revolving bracket of said illuminating body and an arc-shaped stopper is made under the bottom of the pivoting seat to allow the illuminating body to be fixed at an inclined angle by utilizing the friction between the slide-resistant strips and the arc-shaped stopper.

Said illuminating body is combined with the top of revolving bracket by means of pivoting connection so that it is able to turn to the left or to the right. The advantageous effect brought about by the above technical scheme is apparent: As said magnifying plate can be fixed on the fixer by the method of clamping, users will replace magnifying plates of different magnification according to their needs; besides, replacement is made very easy and when user does not need to use the magnifying plate, it can be turned up to depart from the user's sight by revolving the stretching tenons clamped by the clamps. Further more, said illuminating body able to adjust its depression and elevation angle is possible to adjust its illumination depression and/or elevation angle to allow light to irradiate upon the processing

point directly so that various operation convenience and practical effect are realized.

BRIEF DESCRIPTION OF THE DRAWINGS

1. FIG. **1** is a schematic background showing the 3-dimentional view of a conventional head magnifying glass;

2. FIG. **2** is a schematic diagram of a conventional head magnifying glass;

3. FIG. **3** is a 3-dimentional exploded diagram of the present invention;

4. FIG. **4** is a schematic diagram showing the combination of the present invention;

5. FIG. **5** is a schematic diagram showing the adjustment of magnifying plates of the present invention; and

6. FIG. **6** is a schematic diagram showing the adjustment of the depression angle and elevation angle of illuminating body of the present invention.

Denotation of Marking Numbers:

Conventional head magnify glass part:
10-head magnifying glass
20-fixer
201-slot
202-buttoning seat
40-movable plate
30-magnifying plate
60-illuminating body
401-magnifying plate
50-magnifying plate
The present invention part:
1-head magnifying glass
2-fixer
21-clamp
22-pivoting seat
221-stopper
3-magnifying plate
31-tenon
4-illuminating body
41-revolving bracket
441-slide-resistant strip

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Now the present invention will be clarified in detail by embodiments thereof shown in the attached drawings.

In the FIGS. **3** and **4**, more than one set of clamps **21** facing each other in pairs are set up under the bottom of the fixer **2** of head magnifying glass **1** to allow the tenons **31** stretching out from the top of magnifying plate **3** to be clamped in them; a pivoting seat **22** is built above the fixer **2** and said pivoting seat **22** is connected by pivoting with a revolving bracket **41** revolving in the pivoting seat **22**. Besides, several slide-resistant strips **411** are attached to the surface of revolving bracket **41** beneath the bottom of illuminating body **4** and an arc-shaped stopper **211** conforming the arrangement of said slide-resistant strips **441** is built under the bottom of pivoting seat **22** to allow illuminating body **4** to stay at a certain angle by means of the friction between slide-resistant strips **441** and arc-shaped stopper **221**. In the above construction, said illuminating body **4** is combined with the top of revolving bracket **41** by pivoting to enable said illuminating body **4** to turn to the left or to the right.

In FIG. **5** said magnifying plate **3** is clamped up in clamps **21** by its tenons **31**, hence said tenons clamped up in clamps **21** will turn up simultaneously with the turning up of magnifying plate **3** so that the magnifying plate **3** will depart from user's sight while it is not in use, and thus the convenience of use for the user of whether the work piece is needed to be magnified or not is provided. Moreover, as said magnifying plate **3** is fixed by clamping tenons **31** in clamps **21**, the user is able to take apart the original magnifying plate **3** and replace it with another magnifying plate **3** of different magnification, or it is also possible to put in order two magnifying plates **3** and **3'**, with one before the other in the corresponding positions in clamps **21** to compose the magnification of both of them so that user can adjust the magnification arbitrarily.

In FIG. **6**, in the course of processing, if the user needs auxiliary light to irradiate upon the processing article, to facilitate processing, he just needs to switch on the illuminating body, and if the distance of illumination is needed to be adjusted, he can turn the illuminating body **4** to make it rotate by utilizing revolving bracket **41** rotating in pivoting seat **22**, and meanwhile, by utilizing the friction between the stopper **221** of pivoting seat **22** and the slide-resistant strips **441** of revolving bracket **41**, the revolving bracket **41** can be made stay at a certain inclined angle, to change the irradiating position so as to achieve the goal of exact illumination onto the processing article.

Take the advantage of the above, the present invention creates beneficial results as follows:

1. As magnifying plate is fixed in the clamping seat by the method of clamping, when the user wants to replace the original magnifying plate with another one of different magnification, he only needs to take apart the original one so replacement is made very easy. Besides, by utilizing 2 magnifying plates placed one before the other, magnification will be the composition of that of the two, and the object of arbitrarily adjusting magnification is thus achieved.
2. Secondly, as the tenons of magnifying plate clamped the clamps can rotate, when there is no need to use the magnifying plate, the user will turn it up and it will then depart from the user's visual range, and conversely, the magnifying plate can be turned down to return to its original position.
3. Furthermore, as the magnifying plate is fixed with the tenons on its top clamped by the clamps beneath the fixer, its side edges appear to be suspending state, which allows wider visual scope of magnifying plate as well as better stereoscopic visual sense.
4. Since the revolving bracket on the bottom of said illuminating body can rotate in the pivoting seat, the angle of depression and/or elevation of illuminating body can be adjusted to change the illuminated part of working article to achieve the object of exact illumination upon the processing part of work piece.
5. In addition, as the illuminating body can also make left or right turning by utilizing the pivoting connection with the top of revolving bracket, the brightness of its light can be adjusted on the left or right side.

To sum up, the present invention possesses the above-mentioned advantages compared with conventional construction, it is thereby that the inventor applies for a patent for the present invention.

I claim:

1. A head magnifying glass comprising:

a fixer with an upper surface and a bottom surface, the fixer having more than one clamps on the bottom surface thereof;

a magnifying plate having tenons stretching out from top portion of the magnifying plate for engaging with the clamps so as to connect the magnifying plate to the fixer;

a pivoting seat on the upper surface of the fixer;

an illuminating body connected to the pivoting seat in such a way that the illuminating body is able to rotate around a first axis.

2. The head magnifying glass according to claim 1, wherein the first axis is substantially parallel with the upper surface of the fixer.

3. The head magnifying glass according to claim 1, wherein the clamps on the bottom surface of said fixer face each other in pairs, and the number of tenons on the top portion of the magnifying plate matches that of the corresponding clamps.

4. The head magnifying glass according claim 1, further comprising a revolving bracket having a first end and a second end, wherein the first end is pivotally connected to the pivoting seat and the second end is coupled to the illuminating body.

5. The head magnifying glass according claim 4, wherein at least one slide-resistant strip is provided on surface of the revolving bracket at the first end and an arc-shaped stopper is provided on the pivoting seat to allow the revolving bracket to fix the illuminating body at a proper position by means of friction between the slide-resistant strip and the arc-shaped stopper.

6. The head magnifying glass according to claim 4, wherein the illuminating body is pivotally connected with the second end of the revolving bracket, allowing the illuminating body to turn around a second axis.

7. The head magnifying glass according to claim 6, wherein the second axis is substantially perpendicular to the first axis.

8. A head magnifying glass comprising:

a sheet-shaped fixer having a first connecting means on a bottom surface of the sheet-shaped fixer;

a magnifying plate having a second connecting means on a top portion of the magnifying plate for engaging with the first connecting means so as to pivotally and removably connect the magnifying plate to the sheet-shaped fixer;

a third connecting means on the upper surface of the sheet-shaped fixer;

an illuminating body pivotally attached to the upper surface of the sheet-shaped fixer through the third connecting means so that the illuminating body is able to rotate around a first axis substantially parallel with the upper surface of the sheet-shaped fixer.

9. The head magnifying glass according to claim 8, wherein the illuminating body is structured so as to be able to rotate around a second axis substantially perpendicular to the first axis.

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US006215601B1

(12) **United States Patent**
Huang

(10) **Patent No.: US 6,215,601 B1**
(45) **Date of Patent: Apr. 10, 2001**

(54) **HEAD BELT OF HEAD MAGNIFYING GLASS**

(75) Inventor: **Tsung-Hui Huang**, Tai Ping (TW)

(73) Assignee: **GEM Optical Co., Ltd.**, Taichung (TW)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/376,595**

(22) Filed: **Aug. 18, 1999**

(30) **Foreign Application Priority Data**

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(51) **Int. Cl.**[7] **G02B 27/02**; A41D 13/00

(52) **U.S. Cl.** **359/802**; 2/417

(58) **Field of Search** ..... 359/802, 809, 359/810, 811, 818, 822, 829, 830; 2/6.3, 410, 417, 418, 419, 452, 453, 10, 15; 24/17 A, 3.13, 30.5 P, 188, 170, 190

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,431,365 * 7/1995 Feng 248/683
5,467,508 * 11/1995 Feng ..... 24/68 SK
5,844,656 * 12/1998 Ronzani et al. 351/158
6,116,729 * 9/2000 Huang 351/41

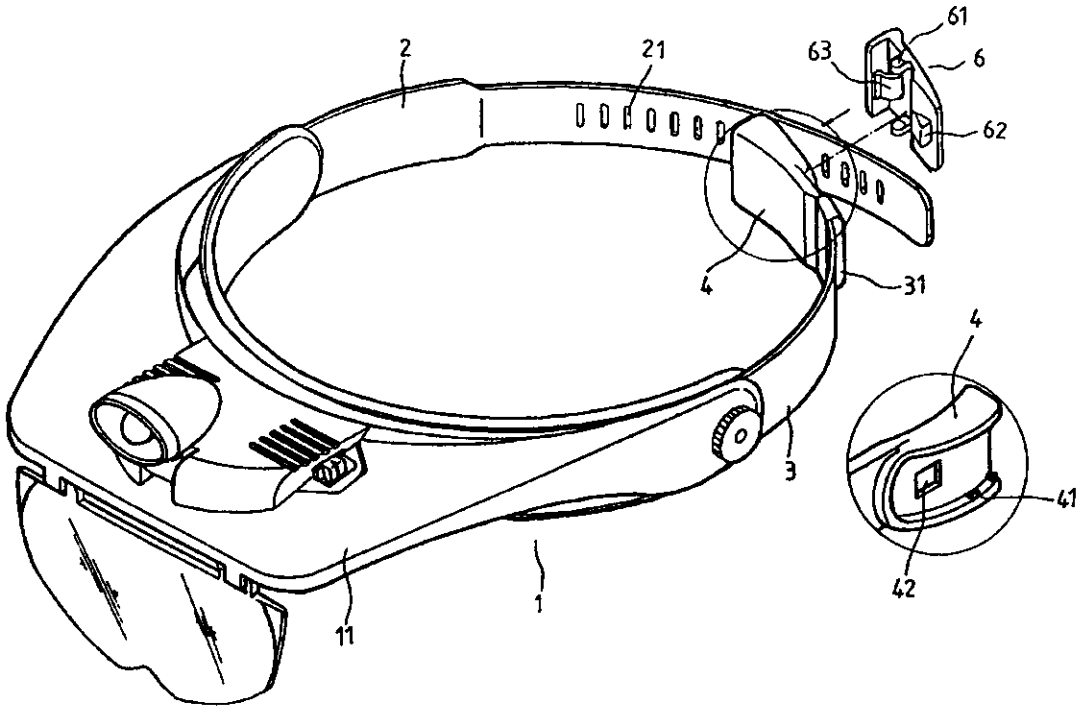
* cited by examiner

Primary Examiner—Georgia Epps
Assistant Examiner—Saeed Seyrafi
(74) *Attorney, Agent, or Firm*—Jiawei Huang; J C Patents

(57) **ABSTRACT**

A head belt of head magnifying glass includes a first and a second head belt set up at both sides of the fixer of magnifying glass. More than one buttoning holes are made on the first head belt vertically. A buttoning seat stretches out from the second head belt. A vacancy forms between said buttoning seat and the second head belt. A through hole is made at the inner and of the buttoning seat and a movable plate is fixed on the buttoning seat. The movable plate is pivoted by its both sides at near the middle part of the lateral sides of buttoning seat. A clamping key is established at the end where the movable plate corresponds with the through hole of buttoning seat and a spring plate is built at the other end. It is easy adjustable by inserting the first bead belt in the above mentioned vacancy and buttoning up the clamping key with the buttoning hole and durableness of head belt is thus achieved.

4 Claims, 7 Drawing Sheets



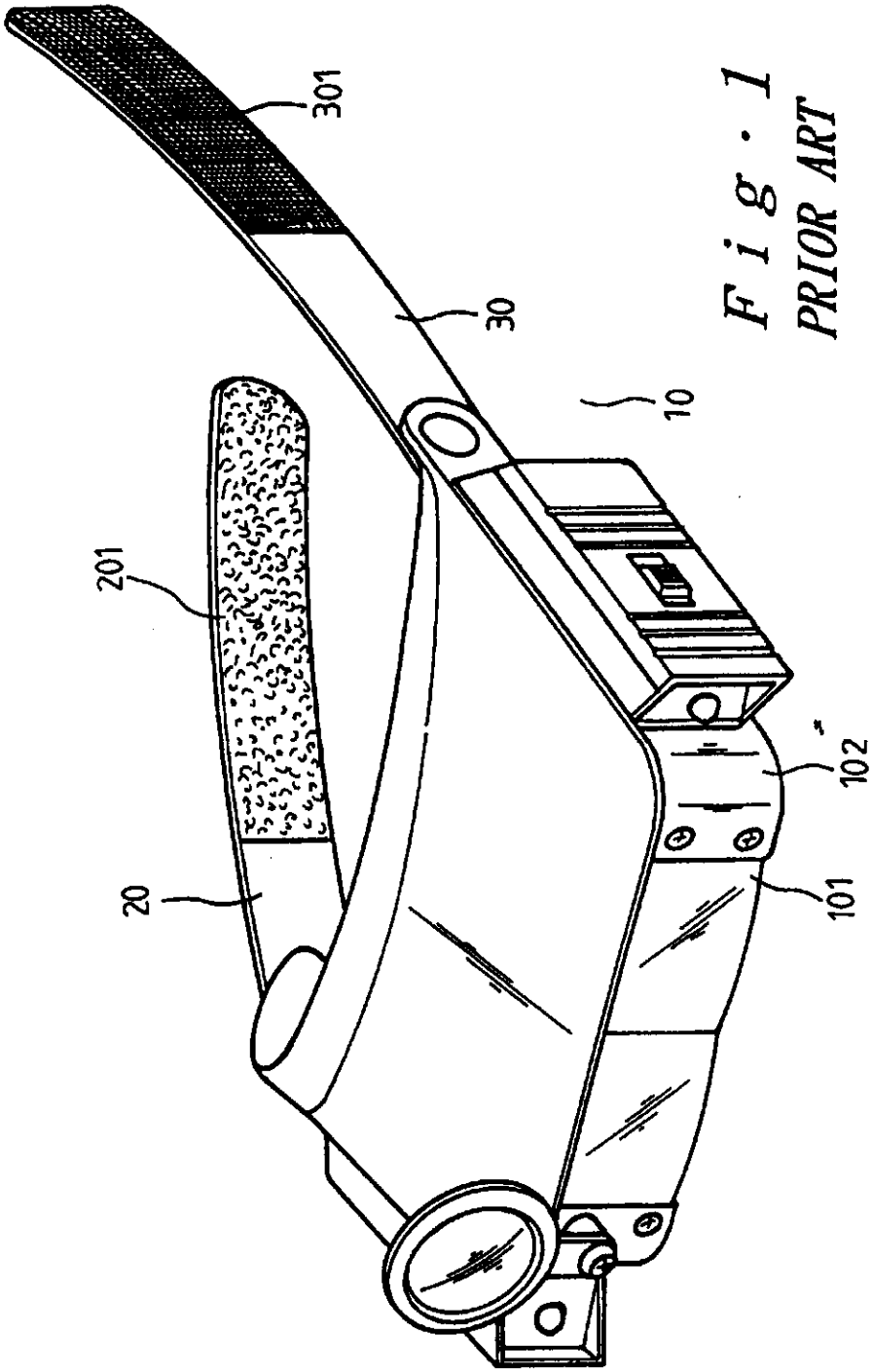


Fig. 1
PRIOR ART

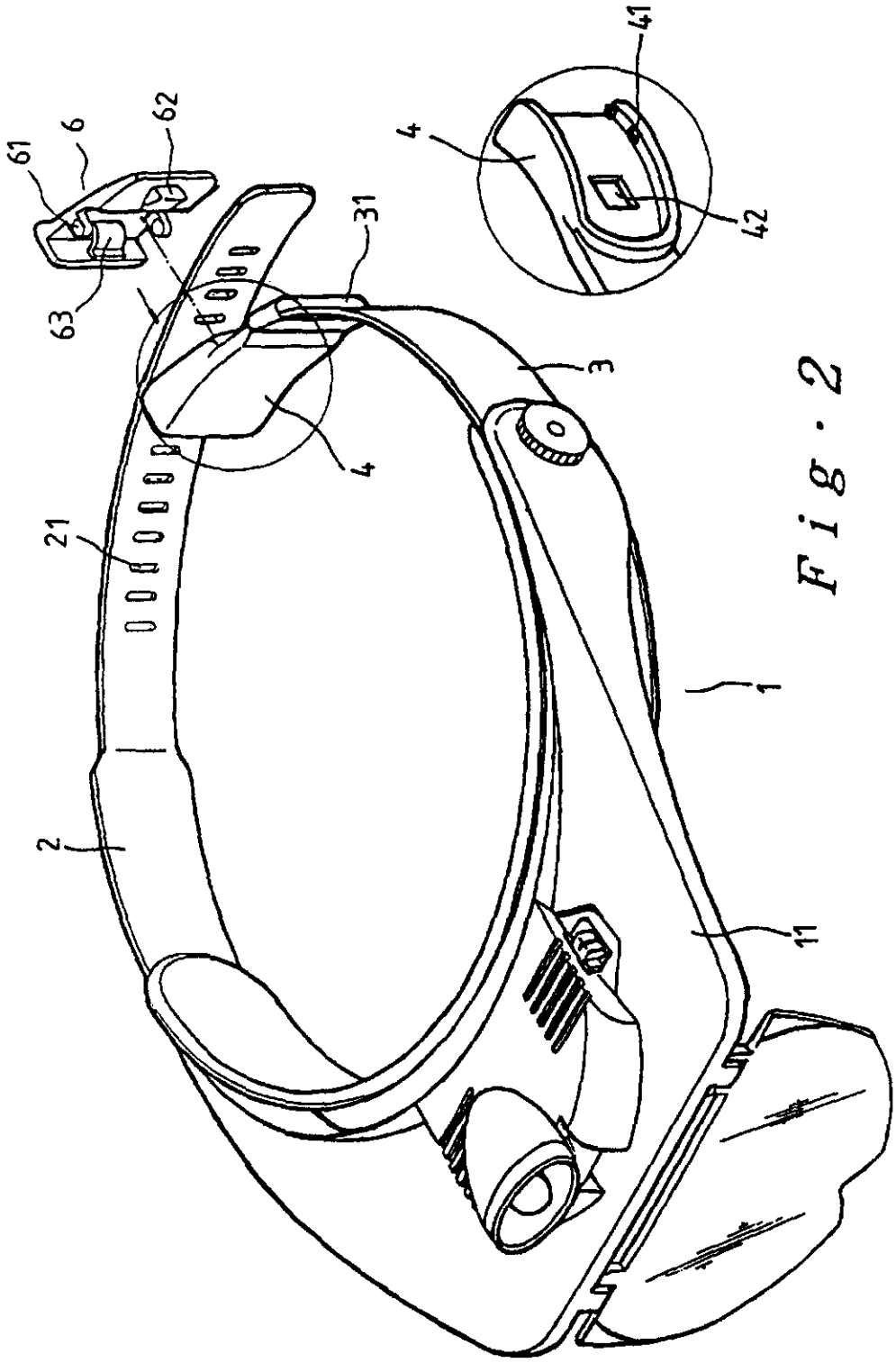


Fig. 2

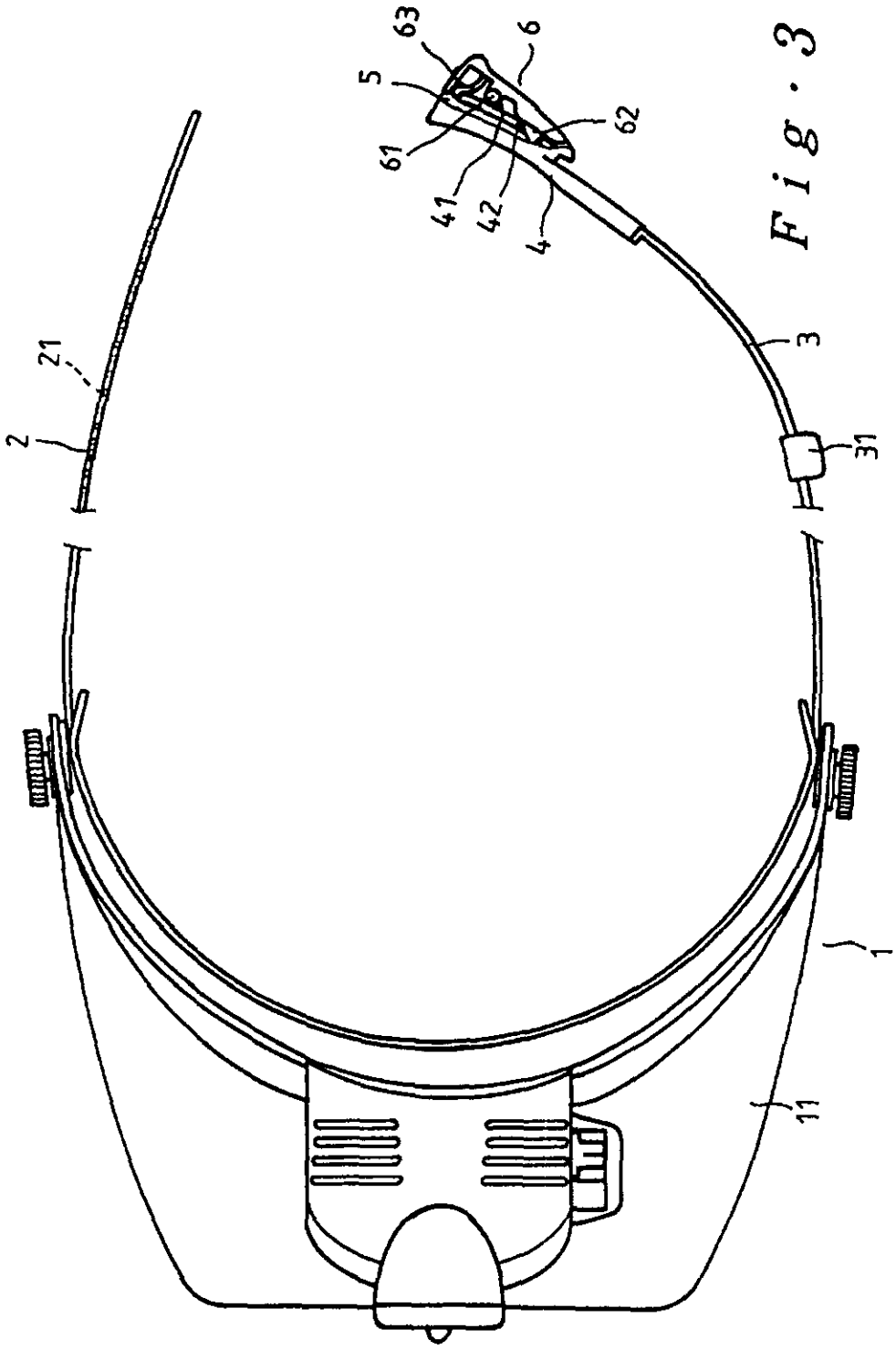


Fig. 3

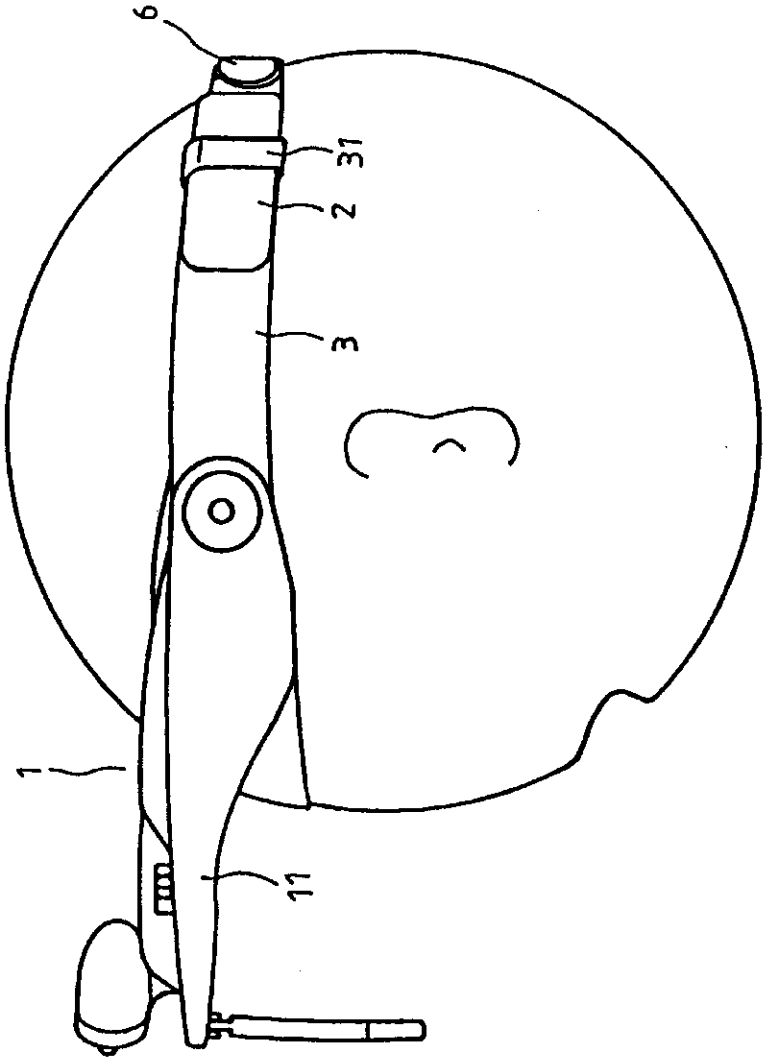


Fig. 4

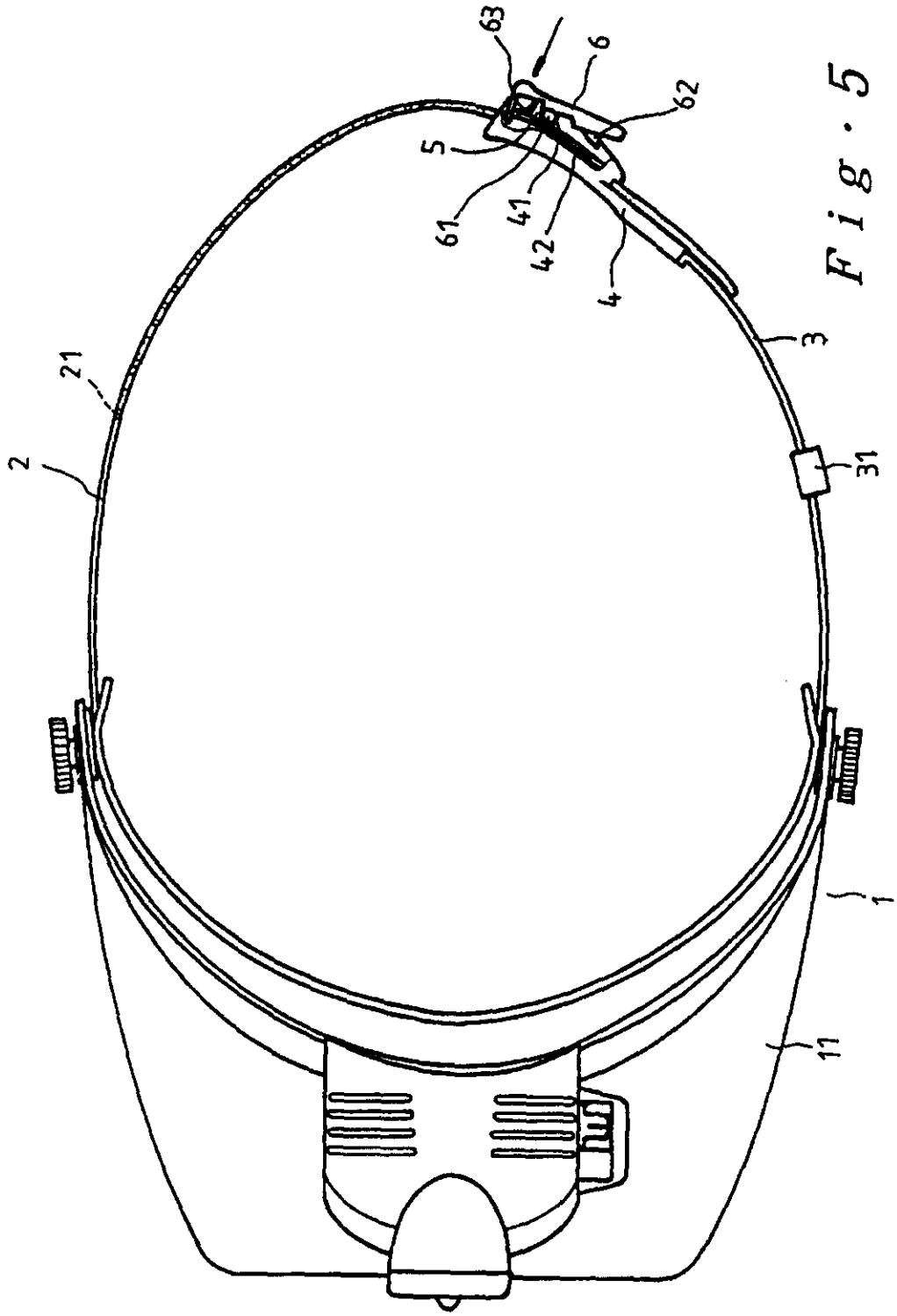


Fig. 5

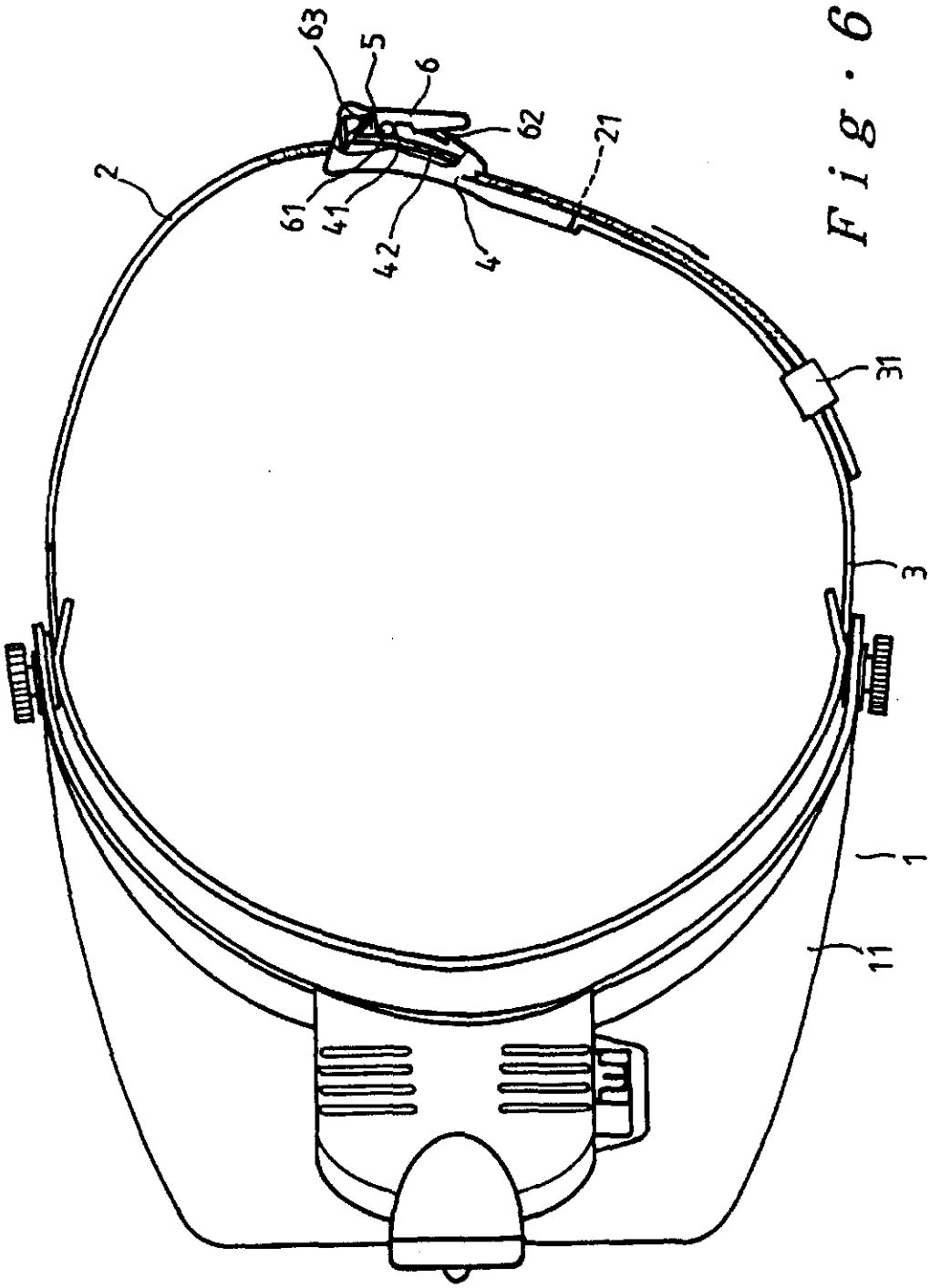


Fig. 6

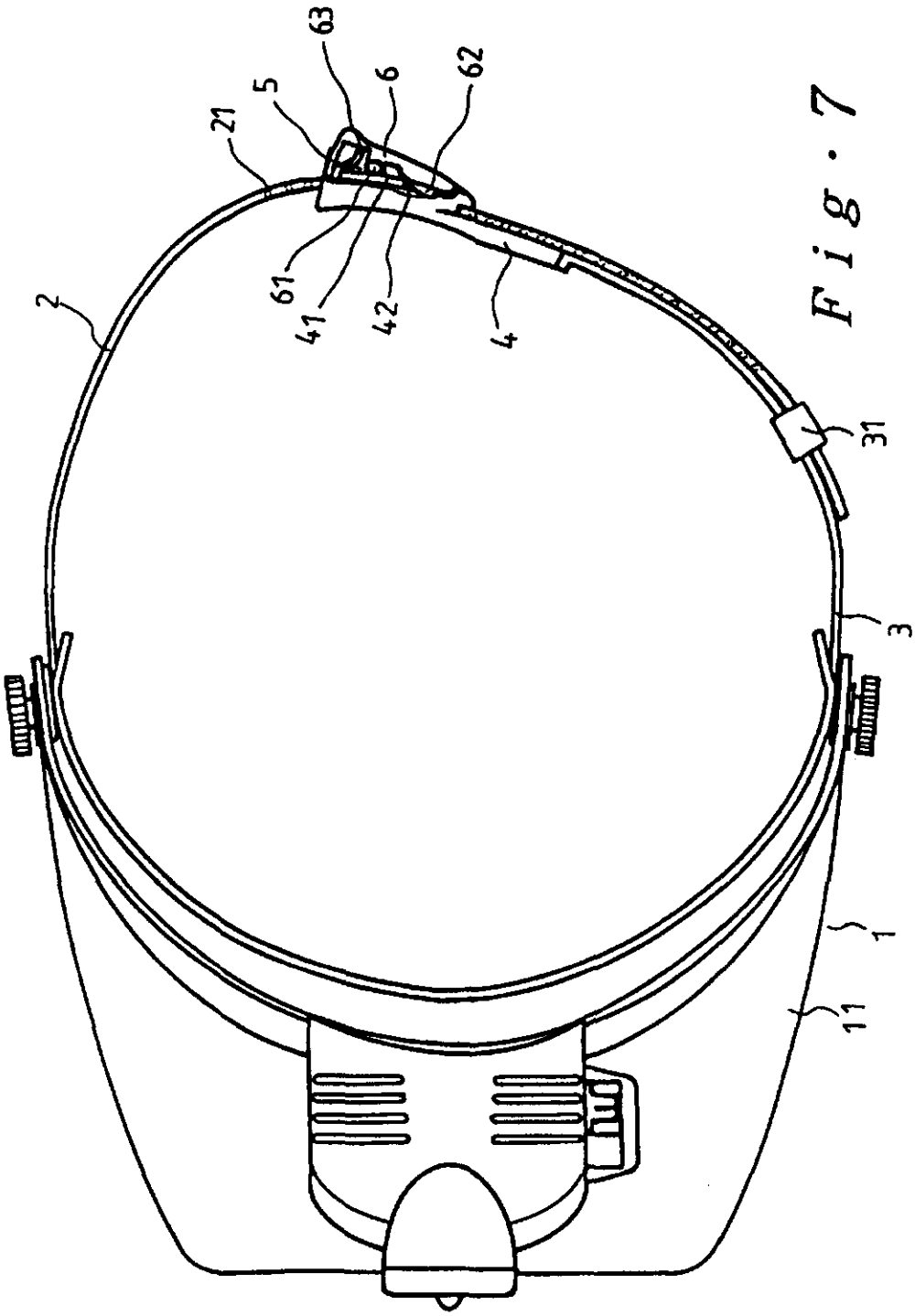


Fig. 7

HEAD BELT OF HEAD MAGNIFYING GLASS

BACKGROUND OF THE INVENTION

The present invention relates to a head belt of head magnifying glass, and more particularly to an easy adjustable and more durable head belt construction.

With the quick development of industries in recent years, every industry gradually tends to the practical development of reducing volume and enabling all-around functions of products. Almost any industry such as precise electronic industry, precise mould manufacturing industry, seal caving industry, composing and typing industry, precise spring, etc., all develops towards said direction without exception. In the course of manufacturing of those precise industries workers have to use head magnifying glass to magnify work piece for easy processing. FIG. **1** shows a conventional head magnifying glass **10**. A first head belt **20** and a second head belt **30** stretch backward from each side of fixer **102** for fixing magnifying glass **101**, respectively. A female sticking belt **201** is sewed up on the inner side of the first head belt **20**, while a male sticking belt **301** is sewed up on the outer side of the second head belt **30**. When the male sticking belt **301** is made stick to the female sticking belt **201**, the first belt **20** and the second head belt **30** get fixed together, forming a ring putting fast on the user's head and enabling him to process the work piece which is magnified by the magnifying glass **101** on fixer **102**. However, because of the different sizes of heads of users as well as sticking up and/or coming off of male sticking belt **301** and female sticking belt **201** while putting on and/or taking off the magnifying glass, villus on male sticking belt **301** and female sticking belt **201** will come off and become less through repeated use, leading to low sticking effect. As a result, the first head belt **20** and the second head belt **30** can not be combined closely and thus lose their effect. For this, the user has to get a new head belt for replacement, and surely, this is disadvantageous in use.

SUMMARY OF THE INVENTION

The major object of the invention is to provide a modified head belt of head magnifying glass to resolve the problem stated above. A movable plate is set up on the buttoning hole made on the first head belt. It separates from the buttoning hole due to lever movement while pressing its one end, and it remains buttoned up well with the buttoning hole when it is not pressed down. After repeated operation of combining and separating the movable plate and buttoning hole, nice buttoning is still kept so that convenient adjustment and longer duration of head belt are achieved.

The object of the invention is carried out by providing a head belt of head magnifying glass, wherein a first head belt and a second head belt stretch backward from each side of the fixer of head magnifying glass respectively.

More than one vertical buttoning holes are made at certain space along said first head belt.

A stretching out buttoning seat is set up at certain place of said second head belt with a vacancy formed between said buttoning seat and the second head belt; a through hole is made at the inner end of buttoning seat and a movable plate is fixed on the buttoning seat; said movable plate is pivoted by the part near the middle of each side of buttoning seat; a clamping key is established at one end of the movable plate corresponding the through hole of the buttoning seat and a spring plate is set up at the other end of the movable plate.

This allows the first head belt to be inserted into the vacancy between the second head belt and the buttoning seat, and by utilizing the clamping key of the movable plate

penetrating the through hole of the buttoning seat to button up in the buttoning hole of the first head belt, the first and second head belts are closely combined. As said movable plate is pivoted at the buttoning seat, when its outer end is pressed down, it is able to revolve with the pivoted part as its fulcrum to have the end where the clamping key is placed rise so that the clamping key separates from the buttoning hole of the first head belt so as to allow the first head belt to adjust its position along the second head belt or separate from the second head belt. Thus the object of easy adjustment and durable effect is acquired.

There is a binding sleeve on the second head belt used to bind the end of the first head belt.

A pivot axle is built on each side of the movable plate near its middle and said pivot axle is inserted in the pivot hole on each side of the buttoning seat to make the movable plate combined with the buttoning seat

Said first head belt and said second head belt are respectively pivoted at the end of one of the two sides of the fixer of head magnifying glass.

The beneficial effect of adopting the above-mentioned technical scheme is apparent: Since said head magnifying is in the shape of a ring by buttoning up the first and second head belts, it allows adjusting the size of combined ring according to the needs of users and/or separating them from each other. Besides, as the first and second head belts of said head belt are inked linked together by means of a buttoning movable plate, such construction will keep very nice buttoning effect after many times of separating and buttoning. So that the efficacy of elongating the duration of use of the head belt is achieved.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a perspective view showing a conventional head magnifying glass;

FIG. **2** is an exploded view of the present invention;

FIG. **3** is a top view of the head magnifying glass showing the composition view of the invention;

FIG. **4** is a side view of the head magnifying glass showing the use of the invention;

FIG. **5** is a top view of the head magnifying glass showing the operation of the invention;

FIG. **6** is a top view of the head magnifying glass showing the operation of the invention;

FIG. **7** is a top view of the head magnifying glass showing the operation of the invention;

DENOTATION OF MARKING NUMBERS:

Conventional head magnifying glass part:

10-head magnifying glass	101-magnifying glass
102-fixer	20 the first head belt
201-female sticking belt	30-the second head belt
301-male sticking belt	

The present invention part:

1-head magnifying glass	2-the first head belt
21-buttoning hole	11-fixer
31-binding sleeve	3-the second head belt
41-pivot hole	4-buttoning seat
5-vacancy	42-through hole
61-pivot axle	6-movable plate
63-spring plate	62-lamping key

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Now the present invention will be described in detail by embodiments thereof shown in the attached drawings.

In FIG. **2**, a first head belt **2** and a second head belt **3** are set up respectively on the backward end of one of the two sides of fixer **11** of head magnifying glass **1** of the invention. Said first head belt **2** is pivoted at the end of one side of the fixer **11** of head magnifying glass and more than one vertical buttoning holes **21** are made at certain space on said first head belt **2**. Said second head belt is pivoted at the end of the other side of fixer **11** of head magnifying glass and a buttoning seat **4** stretches out from proper part of the end to leave a vacancy **5** (See FIG. **3**) formed between said buttoning seat **4** and the second head belt **3**; a pivot hole **41** is made at the middle of each side of buttoning seat **4** and a through hole **42** is set up at the inner end of buttoning seat **4**. Besides, on said buttoning seat **4** is fixed a movable plate **6** and on each side of said movable plate **6** corresponding pivot hole **41** of buttoning seat is set up a pivot axle **61** respectively. A clamping key **62** is established on the end of movable plate **6** corresponding to through hole **42** of buttoning seat **4** and on the other end of the movable plate **6** is set up a spring plate **63**. Again, there is a binding sleeve **31** on said second head belt **3** to bind the end of the first head belt while buttoning up with the second head belt.

In FIG. **3**, while assembling, pivot axle **61** is put into the pivot hole **41** of buttoning seat **4** to enable movable plate **6** to conduct a lever movement with said pivot axle **61** as fulcrum. When the end of movable plate **6**, where spring plate **63** is set up, is pressed, one end of movable plate **6** moves downward by the pressure of spring plate **63** and the other end, where clamping key **62** is placed, turns upwards due to the lever movement. Whereas, when the end, where spring plate **63** lies, is not pressed, the other end, where there is spring plate **63**, returns to its normal position by utilizing release of elasticity of spring plate **63**, and at this time, the other end, where clamping hey **62** exists, of movable plate **6** moves downward to achieve the object of the lever movement.

In FIG. **4**, when the first head belt **2** is inserted in the vacancy **5** between the second head belt **3** and buttoning seat **4**, by utilizing buttoning up clamping key **62** of movable plate **6** and buttoning hole **21** of the first head belt **2**, the first head belt **2** and the second head belt **3** are combined to form a ring for sleeving user's head **12**. It is seen from FIG. **5** that in order to adjust the size of ring formed by the first head belt **2** and second head belt **3** to fit user's head, the end with spring plate **63** of said movable plate **6** is pressed down to allow movable plate **6** to conduct a lever movement to turn up the other end with clamping key **62** so that the clamping key **62** will be disengaged from the buttoning hole **21** of the first head belt **2**. In FIG. **6**, it is seen, after having been disengaged from buttoning by movable plate **6** of the second head belt **3**, the first head belt **2** is able to move freely in vacancy **5** to form an intended ring size by adjusting its combining position with the second head belt **3** or to be pulled out from vacancy **5**. It is seen from FIG. **7** that when the first head belt **2** is adjusted to the proper position in vacancy **5**, the user no longer presses on the end with spring plate **63** of movable plate **6** to allow said end of movable plate **6** to move upwards by means of the elasticity of spring plate **63**, and meanwhile, movable plate **6** conducts lever movement to drive the other end with clamping key **62** to move downward to have it penetrate the through hole **42** of buttoning seat **4** and button in the buttoning hole **21** of the first head belt **2** so as to attain the object of adjusting the head ring size and/or combining or separating the two head belts.

To sum up, owing to the fact that the head belt of conventional head magnifying glass is stuck up by sticking belts, through times of coming off and sticking up in use, the sticking effect between female and male sticking belts will turn worse and even lose stickness, and as a result, the ring size of head belt can not be fixed so that the effect of usage will finally lose. Nevertheless, buttoning method is used in the present invention so it will keep nice buttoning effect after many times of separating and buttoning up in use. The head belt will be more durable for use and improve realistic effect compared with conventional ones.

I claim:

1. A head belt for a head magnifying glass, wherein the head magnifying glass has a fixer with a first end and a second end, the head belt comprising:

a first head belt coupled to the first end of the fixer;

a second head belt coupled to the second end of the fixer, wherein more than one vertical buttoning holes are formed on the first head belt;

only one buttoning seat coupled to the second head belt and forming a vacancy between the buttoning seat and the second head belt, wherein a through hole is formed in the buttoning seat;

a movable plate pivotally coupled to the buttoning seat, wherein a clamping key is set up at one end of the movable plate for engaging with the through hole of the buttoning seat, and a spring plate is established at the other end of the movable plate.

2. The head belt according to claim **1**, wherein there is a binding sleeve on the second head belt used to bind up the first head belt.

3. The head belt according to claim **1**, wherein there is a pivot axle at a middle portion of the movable plate, and the pivot axle is put in a pivoting hole on a lateral side of the buttoning seat to pivotally connect the movable plate with the buttoning seat.

4. The head belt according to claim **1**, wherein the first belt and the second, head belt are pivotally connected to the first end and the second end of the fixer of the head magnifying glass, respectively.

* * * * *

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US00D483779S

(12) United States Design Patent

Huang

(10) Patent No.: US D483,779 S
(45) Date of Patent: ** Dec. 16, 2003

(54) **MAGNIFYING DEVICE WORN AROUND THE HEAD**

(75) Inventor: **Tsung Hui Huang**, Tai Ping (TW)

(73) Assignee: **Gem Optical Co., Ltd.**, Taichung Hsien (TW)

(**) Term: **14 Years**

(21) Appl. No.: **29/174,547**

(22) Filed: **Jan. 22, 2003**

(51) **LOC (7) Cl.** **16-06**
(52) **U.S. Cl.** **D16/135**
(58) **Field of Search** D16/130, 135, D16/136, 310, 31, 340; D29/100, 103, 104; 2/8, 9, 10, 11, 12, 15, 422, 439; 362/105, 106; D26/38, 39; 359/808, 809, 810, 812, 815; D14/135, 372

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,087,049	A *	4/1963	Schecter	362/105
3,572,931	A *	3/1971	Adler	2/15 X
D300,476	S *	3/1989	Sestak	D16/309
D327,491	S *	6/1992	Chandler	D16/135
D359,060	S *	6/1995	Sherlock et al.	D16/135
5,667,292	A *	9/1997	Sabalvaro, Jr.	362/106
D389,826	S *	1/1998	Cousins	D14/135
D430,887	S *	9/2000	Goff et al.	D16/135
D458,287	S *	6/2002	Huang	D16/135

* cited by examiner

Primary Examiner—Paula A. Mortimer
(74) *Attorney, Agent, or Firm*—Dennison, Schultz & Dougherty

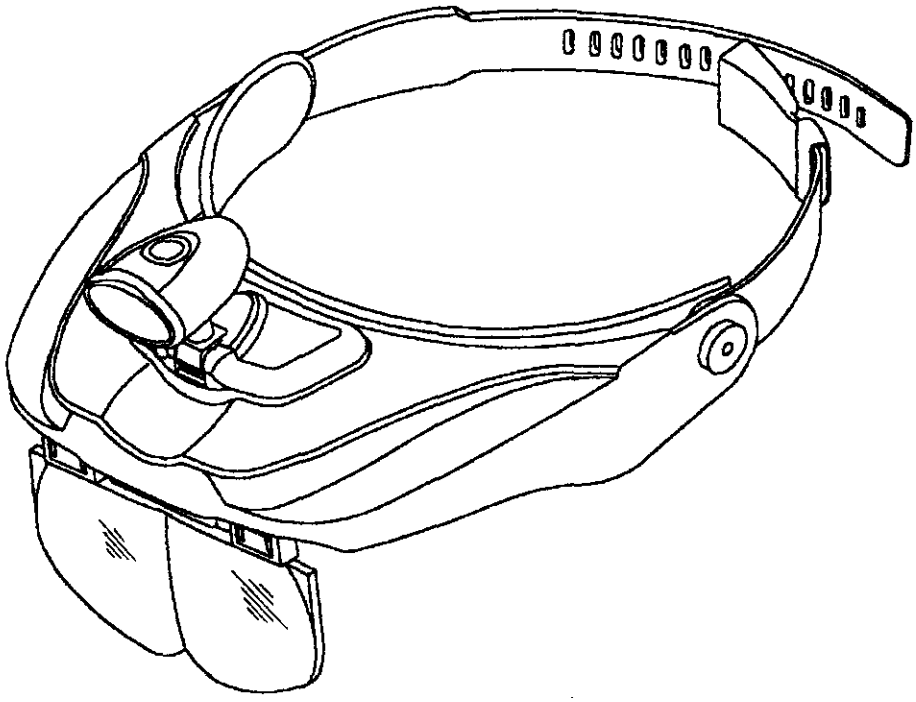
(57) **CLAIM**

The ornamental design for a magnifying device worn around the head, as shown and described.

DESCRIPTION

FIG. **1** shows a perspective view of the present design;
FIG. **2** shows a front elevational view of the present design;
FIG. **3** shows a rear elevational view of the present design;
FIG. **4** shows a left elevational view of the present design;
FIG. **5** shows a right elevational view of the present design;
FIG. **6** shows a top plan view of the present design; and,
FIG. **7** shows a bottom plan view of the present design.

1 Claim, 7 Drawing Sheets



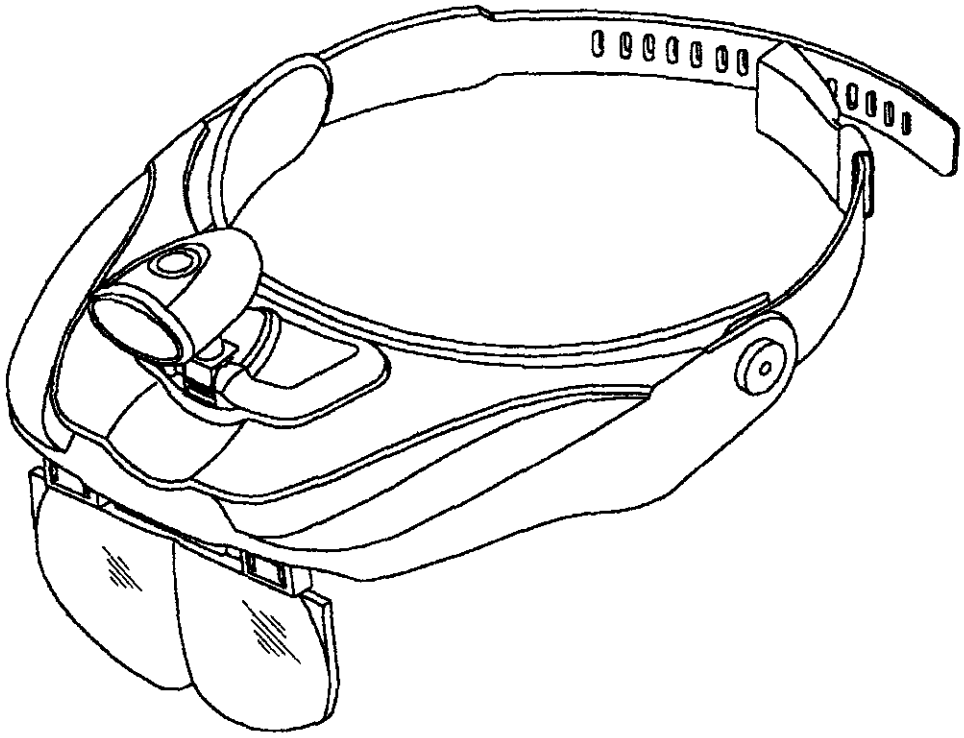


Fig • 1

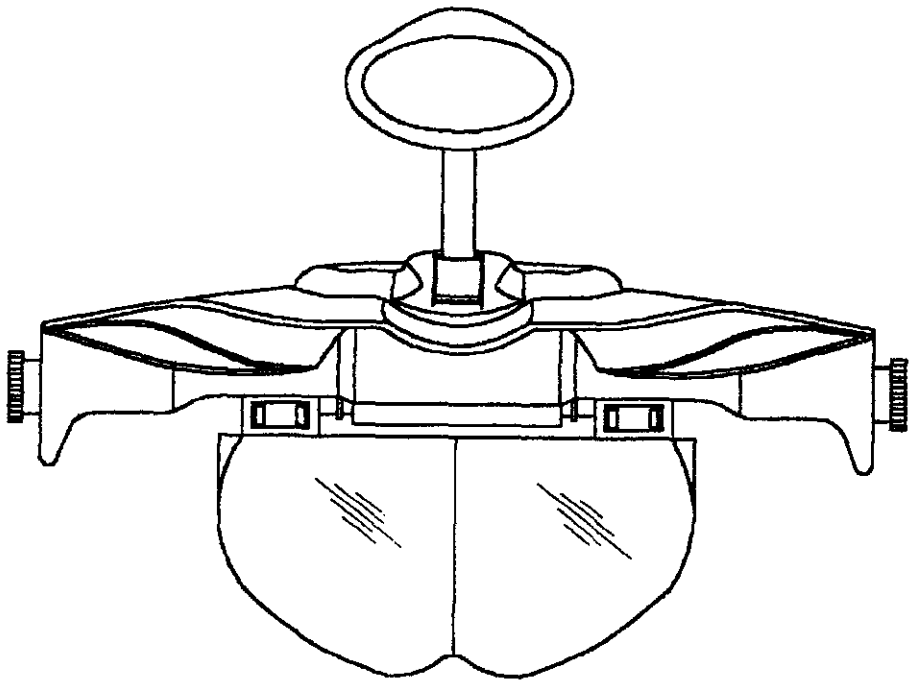


Fig • 2

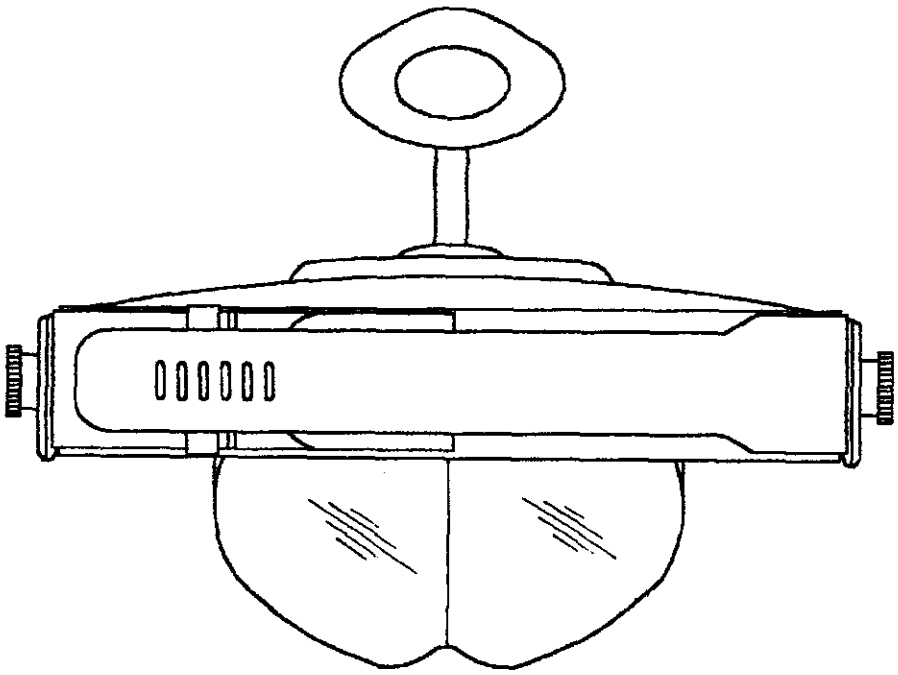


Fig • 3

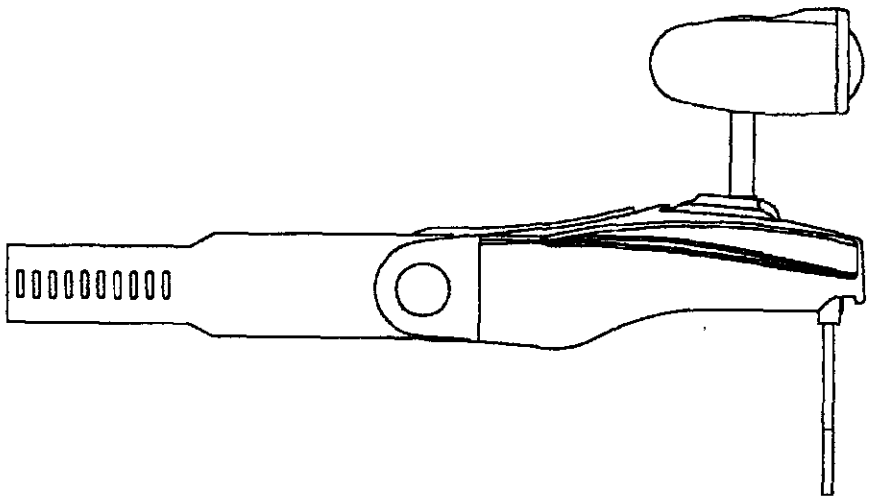


Fig • 4

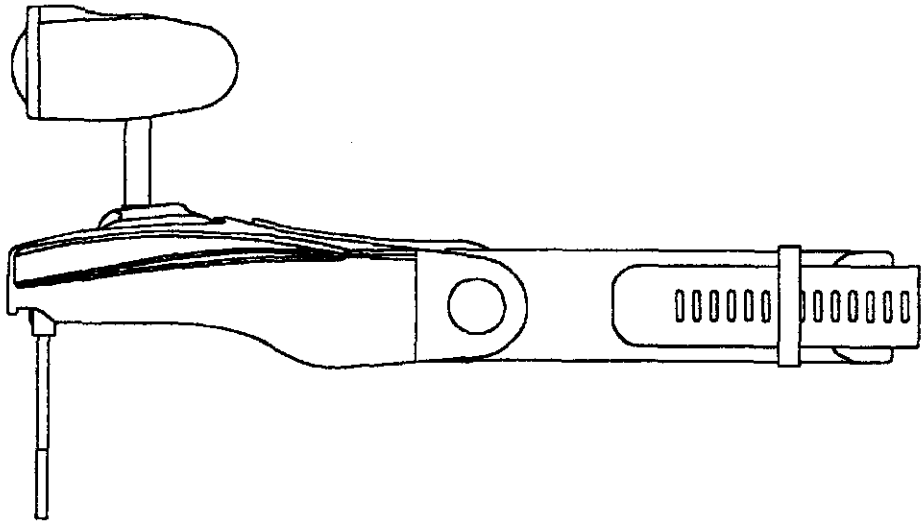


Fig • 5

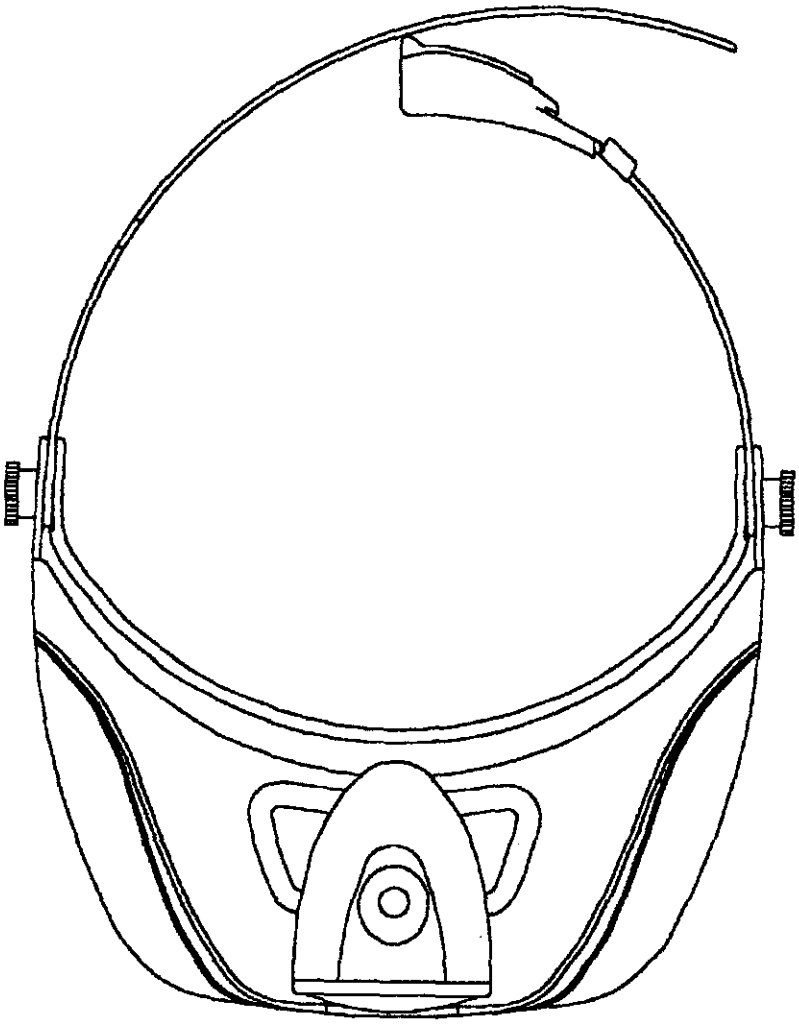


Fig • 6

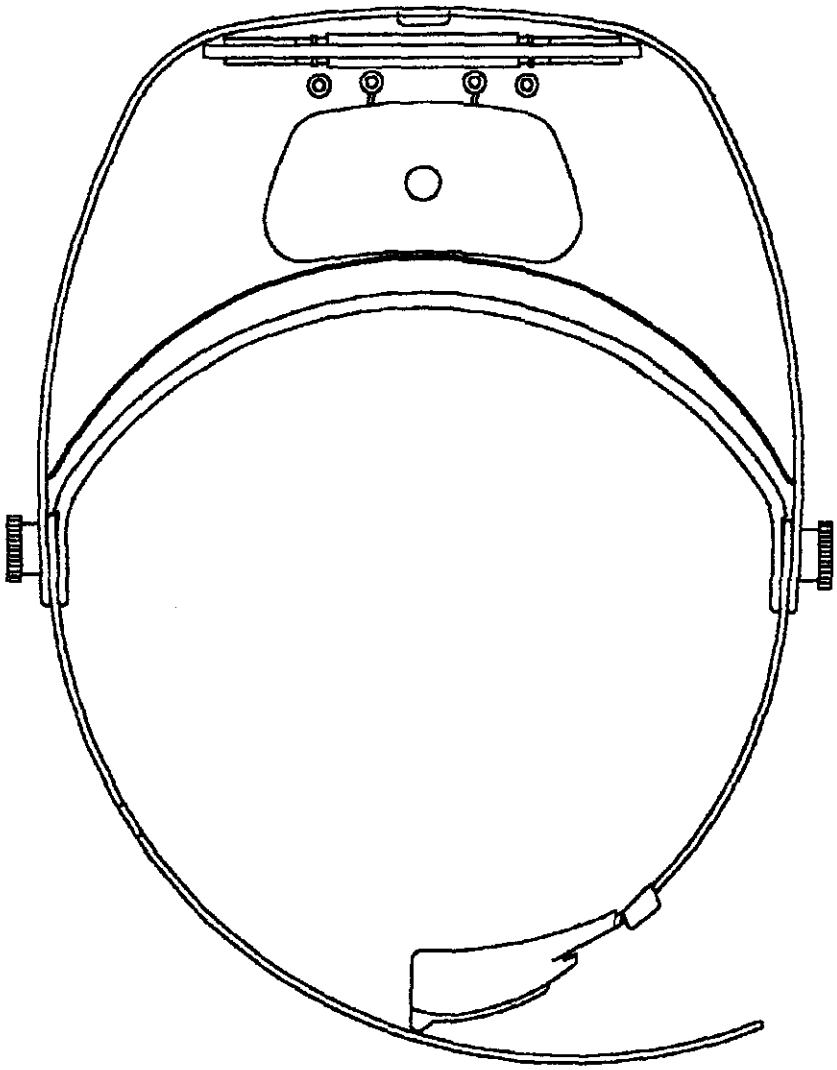


Fig • 7

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US007281826B2

(12) **United States Patent**
Huang

(10) **Patent No.: US 7,281,826 B2**
(45) **Date of Patent: Oct. 16, 2007**

(54) **HEADBAND WITH MAGNIFYING LENS AND DETACHABLE LIGHT**

(75) Inventor: **Tsung Hui Huang**, Tai Ping (TW)

(73) Assignee: **Gem Optical Co., Ltd.**, Taiping (TW)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 18 days.

(21) Appl. No.: **10/350,072**

(22) Filed: **Jan. 24, 2003**

(65) **Prior Publication Data**

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(51) **Int. Cl.**
F21V 21/00 (2006.01)
F21V 21/08 (2006.01)

(52) **U.S. Cl.** **362/398**; 362/190; 362/191; 362/197; 362/199; 362/106; 362/427

(58) **Field of Classification Search** 362/398, 362/190, 191, 197, 199, 427, 105, 106
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,008,040 A * 11/1961 Moore 362/105
3,087,049 A * 4/1963 Schecter 362/105
4,321,660 A * 3/1982 Sokol 362/368
5,357,409 A * 10/1994 Glatt 362/105
6,601,969 B2 * 8/2003 Barton 362/155
2003/0086257 A1 * 5/2003 Lehrer 362/105

* cited by examiner

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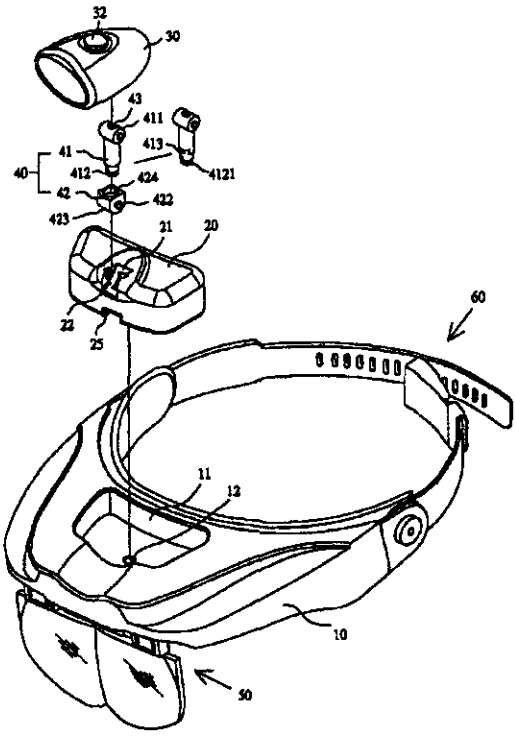
Assistant Examiner—Jacob Y. Choi
(74) *Attorney, Agent, or Firm*—Lowe Hauptman & Berner, LLP

(57) **ABSTRACT**

A headband comprises a magnifying lens and a detachable assembly comprising a battery compartment received in a well and including a top recessed member, a ridge in the recessed member, a bottom magnet magnetically connected to the well, and a bottom cover; illumination means including a cavity inside a bottom recess; and connection means including a hollow T-shaped post including a top pivot member, a bottom pivot member having a peripheral groove, and two rounded projections at both sides of the top pivot member for pivotably coupling to the cavity; and a hollow, parallelepiped base including an interior peripheral protrusion matingly coupled to the groove, two opposite side pins pivotably coupled to the recessed member, and a bottom toothed member matingly, pivotably coupled to the ridge. The assembly can be detached by inserting a pointed object into a through hole on the well to disengage the magnet from the well.

2 Claims, 10 Drawing Sheets



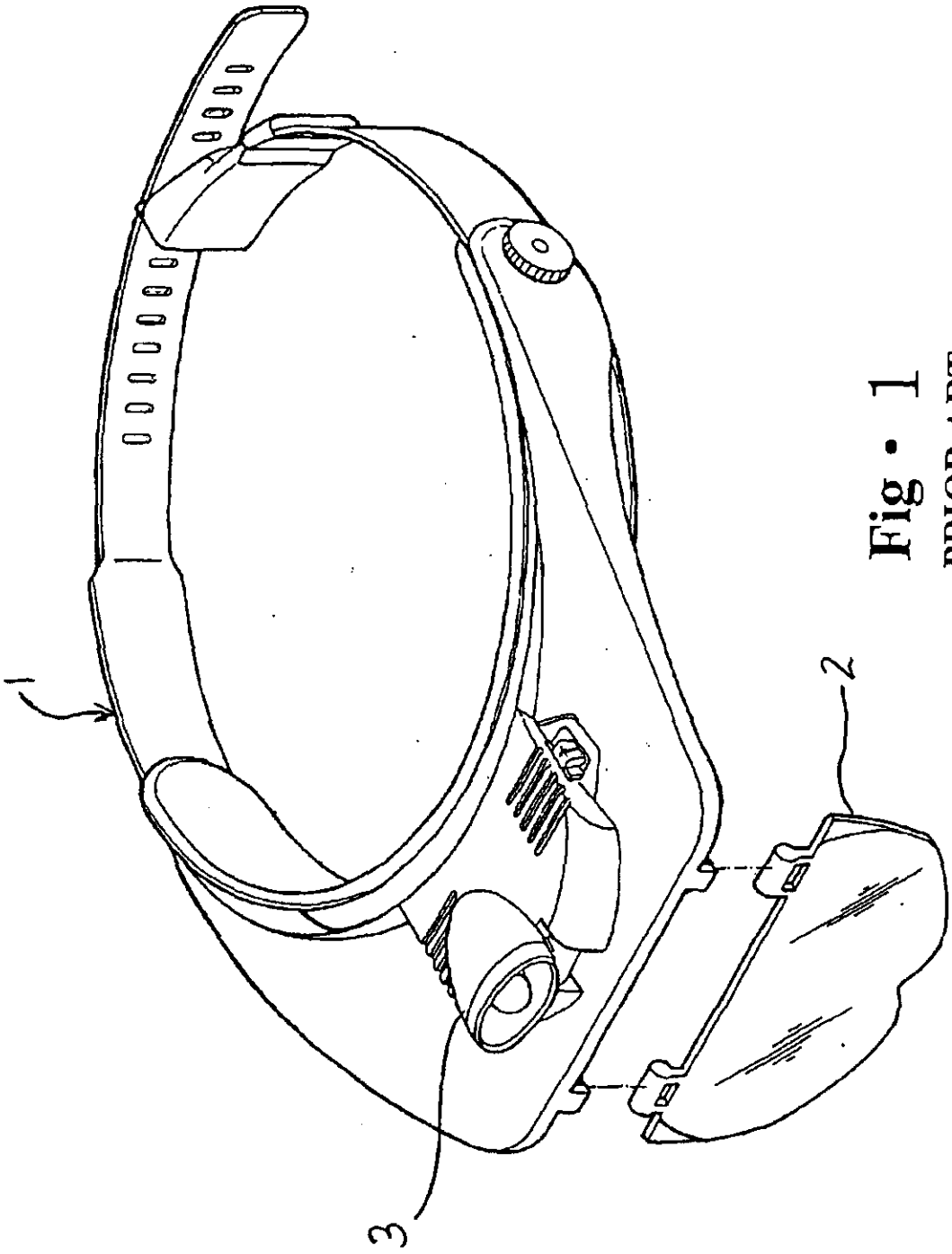


Fig. 1
PRIOR ART

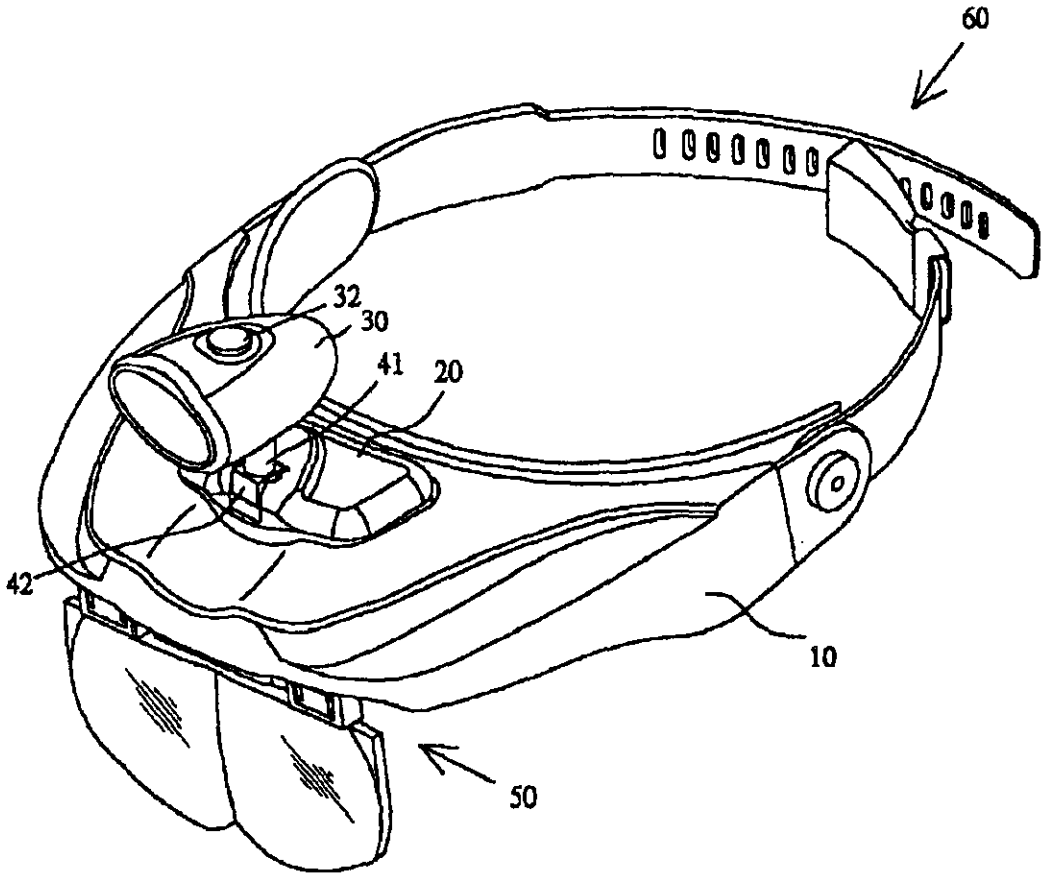


Fig • 2

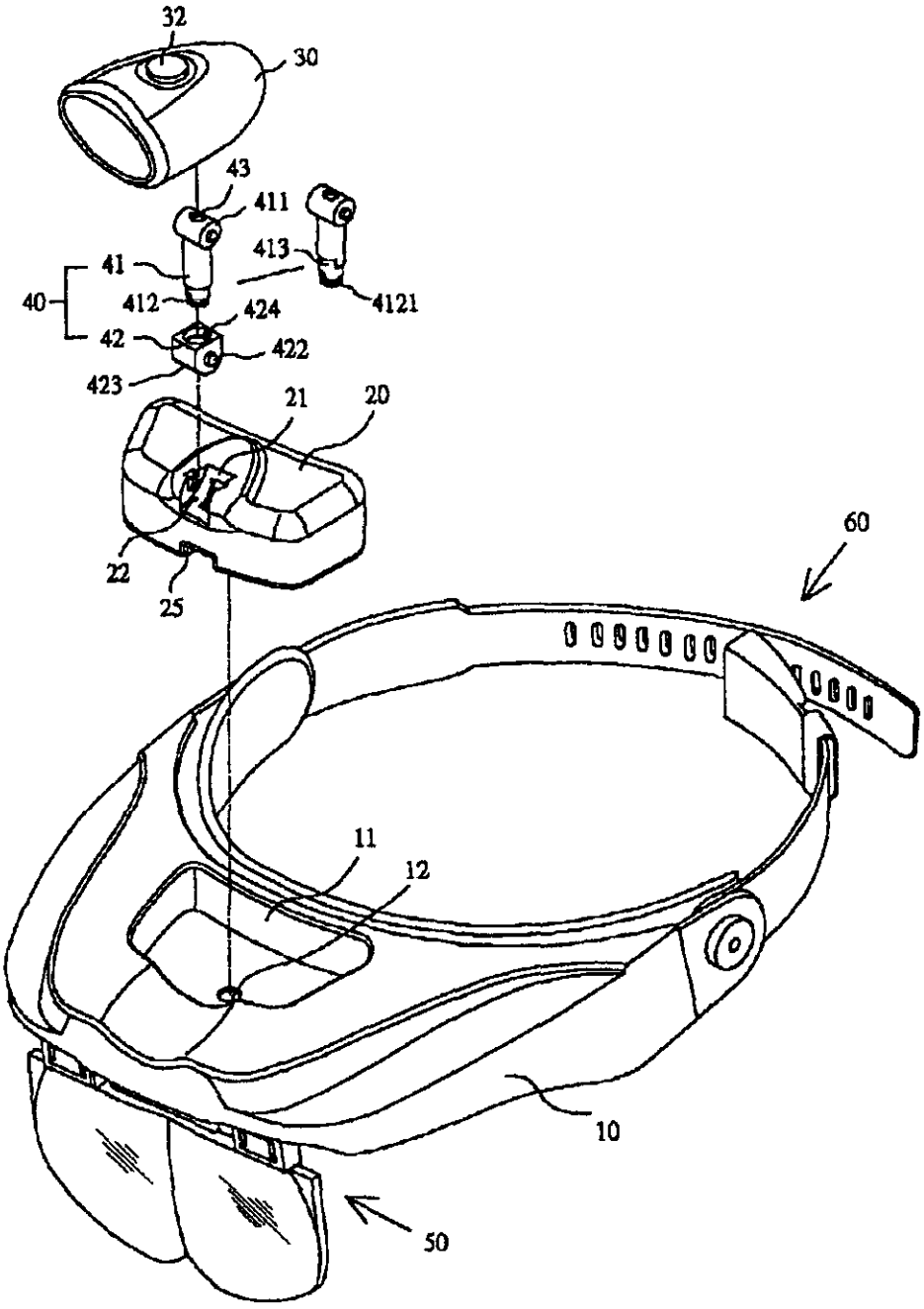

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Fig • 3

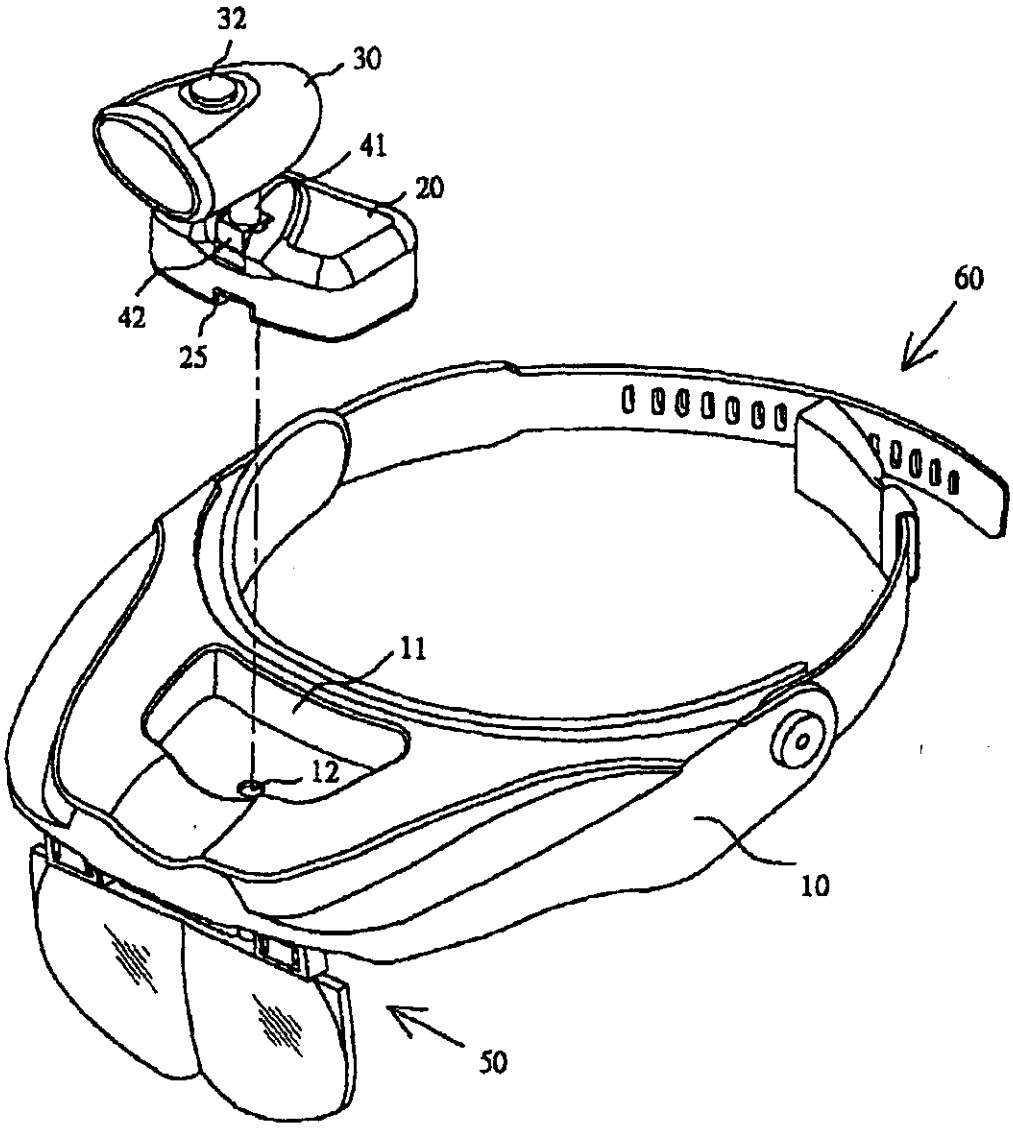

Fig • 4

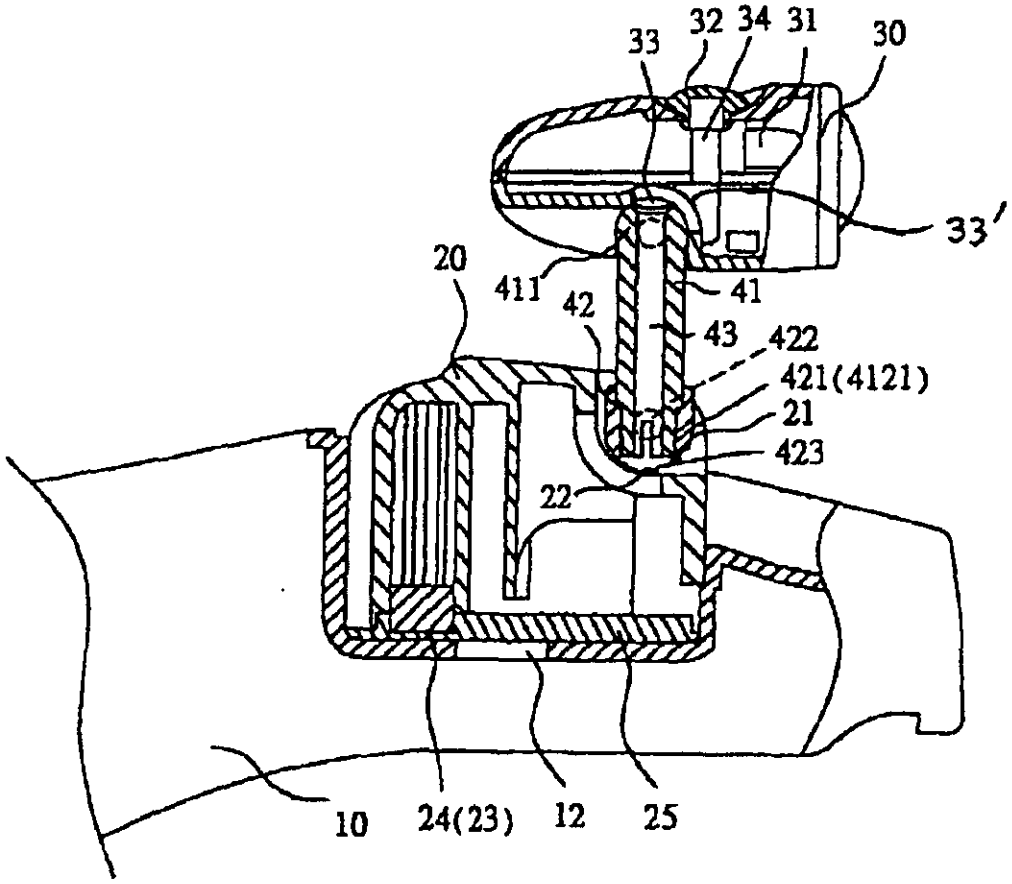
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Fig • 5

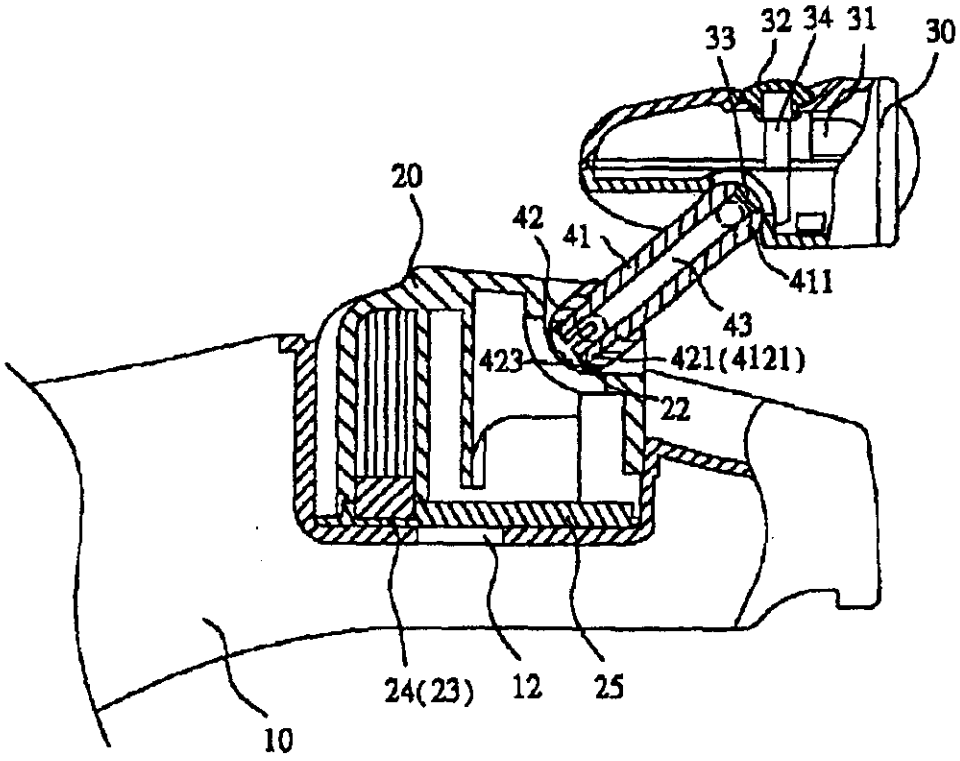


Fig • 6

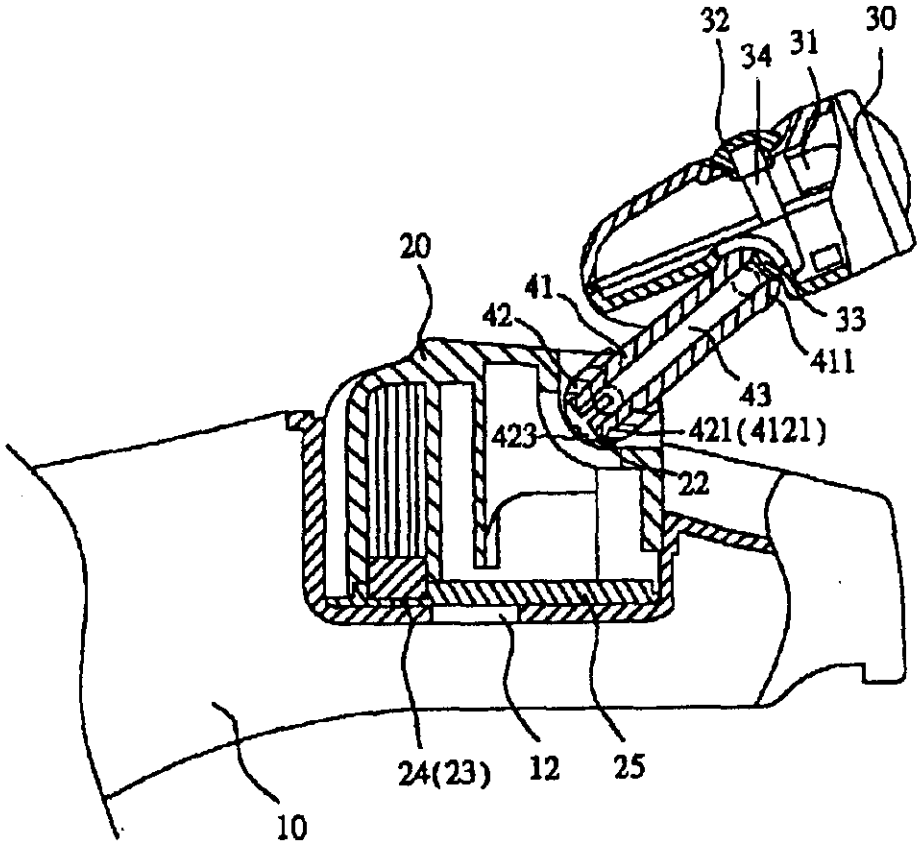


Fig • 7

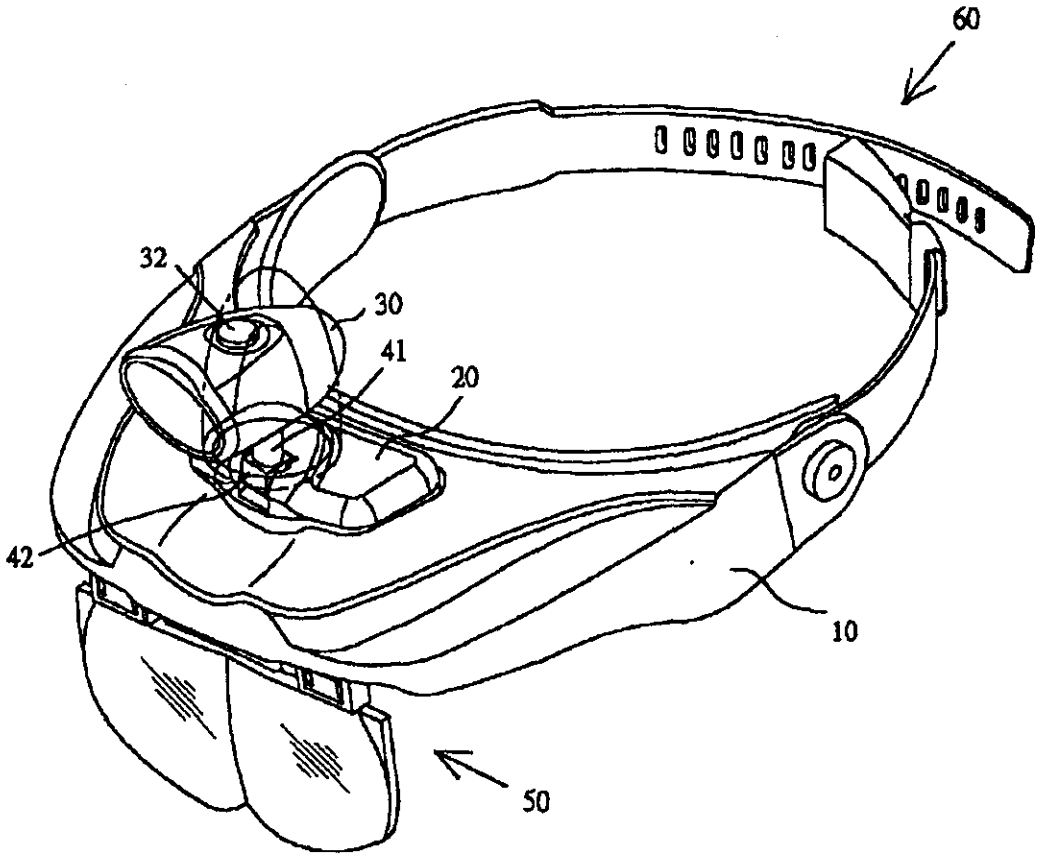


Fig • 8

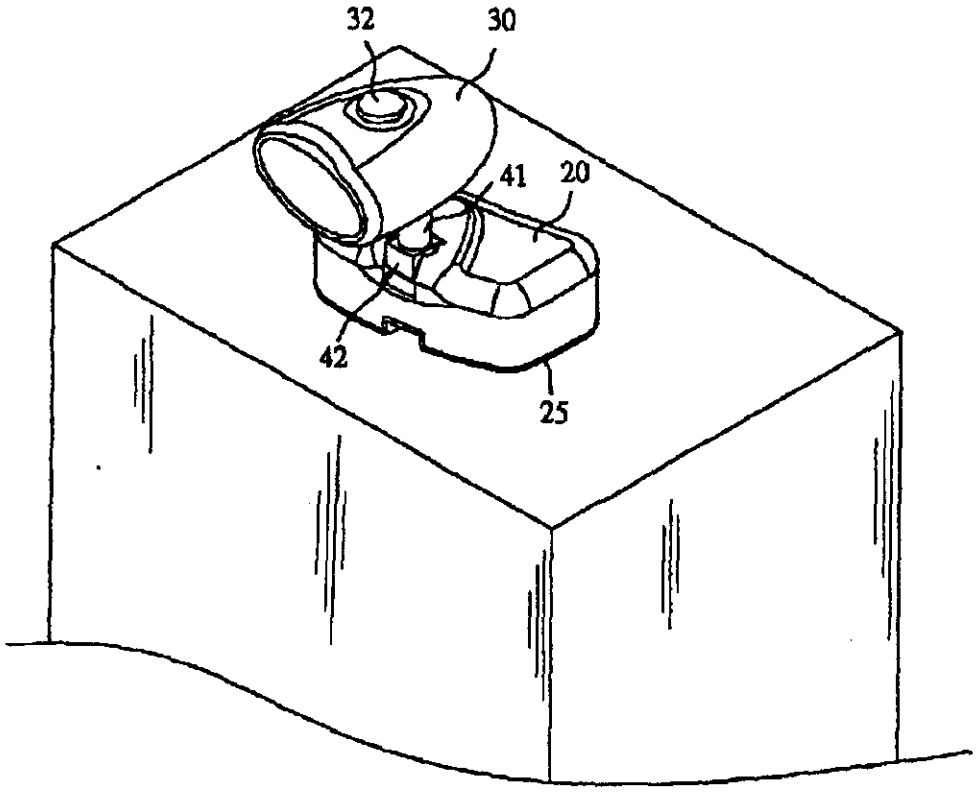


Fig • 9

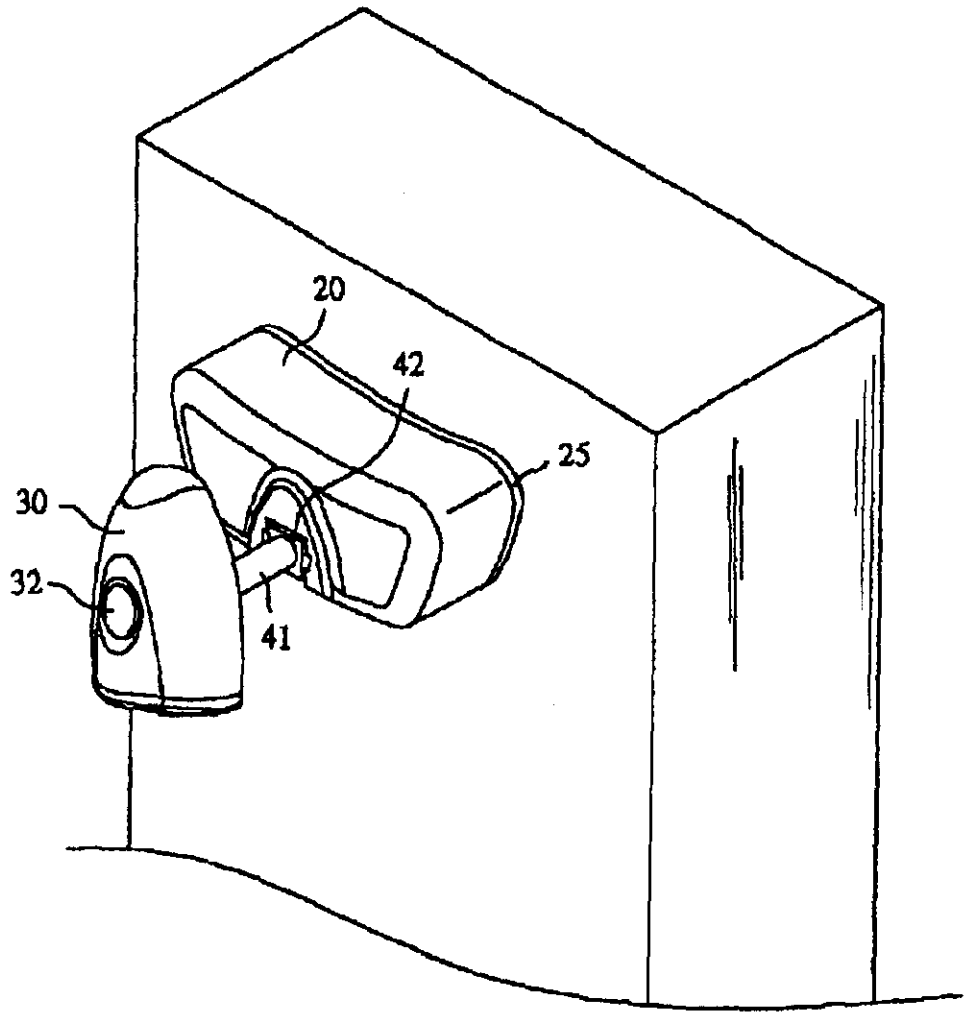


Fig. 10

HEADBAND WITH MAGNIFYING LENS AND DETACHABLE LIGHT

FIELD OF THE INVENTION

The present invention relates to a headband with magnifying lens and light, and more particularly to a headband with a magnifying lens and a detachable, pivotal light.

BACKGROUND OF THE INVENTION

A conventional headband **1** is shown in FIG. **1**. The headband **1** comprises a magnifying lens **2** hingedly coupled to a front end and an illumination assembly **3** pivotably coupled to a top front portion. However, the prior art suffered from several disadvantages. For example, a pivotal angle of the illumination assembly **3** in either horizontal or vertical direction is very limited. Further, the illumination assembly **3** is integrally formed with the headband **1**, i.e., undetachable. Hence, an illumination on a working position is not possible if the headband **1** is taken off from the head. This can cause inconvenience while working. Hence, a need for improvement exists.

SUMMARY OF THE INVENTION

It is therefore an object of the present invention to provide a headband comprising a front well having a bottom through hole and a magnetic member on a bottom; a magnifying lens hingedly coupled to a front end; and a detachable assembly comprising: a battery compartment received in the well, the battery compartment including one or more cells, a top recessed member, a ridge in the recessed member, a bottom slotted section, a magnet in the slotted section for magnetically connecting to the magnetic member, and a bottom cover; illumination means including a LED lamp, an on/off switch, an arcuate bottom recess, and a cavity inside the bottom recess; and connection means including a hollow T-shaped post including a top pivot member, a bottom pivot member having a peripheral groove, and two rounded projections at both sides of the top pivot member for pivotably coupling to the cavity; and a hollow, parallelepiped base including an interior peripheral protrusion matingly coupled to the groove, two opposite side pins pivotably coupled to the recessed member, a bottom toothed member matingly, pivotably coupled to the ridge, and electric wires for electrically connecting the cells to the illumination means; wherein in an operation of detaching the detachable assembly, insert a pointed object into the hole to push the battery compartment upward for disengaging the magnet from the magnetic member.

In one aspect of the present invention the post further comprises an indentation proximate the bottom pivot member and the base further comprises a peripheral flange on an interior surface so as to limit pivot angles of the post and the illumination means by causing the flange to contact the indentation during pivoting.

The above and other objects, features and advantages of the present invention will become apparent from the following detailed description taken with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a perspective view of a conventional headband with a magnifying lens and an undetachable illumination assembly;

FIG. **2** is a perspective view of a headband with a magnifying lens and a detachable illumination assembly according to the invention;

FIG. **3** is a view similar to FIG. **2** with battery compartment, illumination assembly, and connection assembly broken apart;

FIG. **4** is a view similar to FIG. **3** with the battery compartment, the illumination assembly, and the connection assembly assembled;

FIG. **5** is a cross-sectional view showing the battery compartment, the illumination assembly, and the connection assembly mounted on a top front portion of the headband;

FIG. **6** is a view similar to FIG. **5** showing a pivotal operation of the connection assembly;

FIG. **7** is a view similar to FIG. **6** showing a pivotal operation of the illumination assembly;

FIG. **8** is a perspective view showing an about 90 degrees pivotal operation of the illumination assembly;

FIG. **9** is a perspective view showing the detached illumination assembly placed on a flat surface; and

FIG. **10** is a view similar to FIG. **9** showing the detached illumination assembly mounted on a wall.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to FIGS. **2**, **3**, **4**, and **5**, there is shown a headband device **10** constructed in accordance with the invention comprising a battery compartment **20**, an illumination assembly **30**, a connection assembly **40**, a magnifying lens **50** hingedly coupled to a front end and a headband unit **60**. A front well **11** for receiving the battery compartment **20** and a hole **12** on the bottom of the well **11** in communication with the underside of the headband device **10** are formed. In addition to the well **11** and the hole **12**, the characteristics of the invention are the battery compartment **20**, the illumination assembly **30**, and the connection assembly **40** which will be described in detail below.

The battery compartment **20** is shaped to conform with the well **11** and comprises one or more cells (not shown), a top recessed member **21** pivotably coupled to the connection assembly **40**, a ridge **22** in the recessed member **21**, a slotted section **23** on the bottom, a magnet **24** mounted in the slotted section **23** for magnetically connecting to an iron or steel member (not shown) on the bottom of the well **11**, and a bottom cover **25**. The illumination assembly **30** comprises a LED (light-emitting diode) lamp **31**, an on/off switch **32** on the top, and a cavity **33** inside an arcuate bottom recess **33'** pivotably coupled to the connection assembly **40**. The connection assembly **40** comprises a base **42** and a hollow T-shaped post **41** having a top pivot member **411** and a bottom pivot member **412** in which two rounded projections are formed at both sides of the top pivot member **411** for pivotably coupling to the cavity **33** and the bottom pivot member **412** comprises a peripheral groove **4121**. The base **42** is a parallelepiped and comprises an interior peripheral protrusion **421** matingly coupled to the groove **4121**, two pins **422** on opposite sides pivotably coupled to the recessed member **21**, and a toothed member **423** on the bottom matingly, pivotably coupled to the ridge **22**. The connection assembly **40** and the illumination assembly **30** further comprise a channel **43** in communication with inside of the base **42** and a passage **34** in communication with the channel **43** respectively so that electric wires (not shown) may be connected from the cells in the battery compartment **20** to the illumination assembly **30** via the channel **43** and the passage **34**. As an end, a power on operation of the headband device **10** will enable the illumination assembly **30** to emit light.

The post **41** is permitted to pivot about 360 degrees with respect to the base **42**. However, for avoiding the operation of the illumination assembly **30** from being adversely affected by such large angle pivot of the post **41**, the pivot angle of the post **41** should be limited. Preferably, a lower portion of the post **41** adjacent the bottom pivot member **412** is suitably cut around the surface to form an indentation **413**. Further, a peripheral flange **424** is formed on the interior surface of the base **42**. Hence, the pivot angle of the post **41** is limited when the flange **424** is in contact with the indentation **413** during pivoting.

Referring to FIGS. **6**, **7**, and **8**, pivotal operations of the illumination assembly **30** and the connection assembly **40** are illustrated. The illumination assembly **30** is permitted to pivot in either horizontal or vertical direction in a large angle with respect to the connection assembly **40** and thus the battery compartment **20** because as stated above, the toothed member **423** of the base **42** is matingly, pivotably coupled to the ridge **22** (see FIGS. **6** and **7**). Further, as shown in FIG. **8** the illumination assembly **30** still can pivot about 90 degrees even the flange **424** may contact and be stopped by the indentation **413**.

Referring to FIGS. **9** and **10** for detaching the assembly of the battery compartment **20**, the illumination assembly **30**, and the connection assembly **40**, a user may insert a pointed object into the hole **12** to push the bottom of the battery compartment **20** upward until the magnet **24** is disengaged from the iron or steel member on the bottom of the well **11**. The detached assembly of the battery compartment **20**, the illumination assembly **30**, and the connection assembly **40** may be placed on a flat surface (FIG. **9**) or mounted on a wall (FIG. **10**) as long as there is an iron or steel member provided thereon.

While the invention has been described by means of specific embodiments, numerous modifications and variations could be made thereto by those skilled in the art without departing from the scope and spirit of the invention set forth in the claims.

What is claimed is:

1. A headband comprising:

a front well having a bottom through hole and a magnetic member on a bottom;

a magnifying lens hingedly coupled to a front end of said headband; and

a detachable assembly comprising:

a battery compartment received in the well, the battery compartment including one or more cells, a top recessed member, a ridge in the top recessed member, a bottom slotted section, a magnet in the slotted section for magnetically connecting to a magnetic member, and a bottom cover;

an illumination assembly comprising a LED lamp operably connected to the battery compartment via an on/off switch, an arcuate bottom recess, and a cavity inside the bottom recess; and

a connection assembly comprising a hollow T-shaped post including a top pivot member at one end thereof and a bottom pivot member at an opposite end thereof and having a peripheral groove, and two rounded projections at both sides of the top pivot member for pivotably coupling to the cavity; and a hollow, parallelepiped base including an interior peripheral protrusion matingly coupled to the groove, two opposite side pins pivotably coupled to the recessed member, a bottom toothed member matingly, pivotably coupled to the ridge, and electrically connecting the cells to the illumination means;

wherein in an operation of detaching the detachable assembly, insert a pointed object into the hole to push the battery compartment upward for disengaging the magnet from the magnetic member.

2. The headband of claim **1**, wherein the T-shaped post further comprises an indentation proximate the bottom pivot member and, further comprising a base having a peripheral flange on an interior surface so as to limit pivot angles of the post and the illumination means by causing the flange to contact the indentation during pivoting.

* * * * *

F

US00D613437S

(12) United States Design Patent

Chan

(10) Patent No.: US D613,437 S
(45) Date of Patent: ** Apr. 6, 2010

(54) **ILLUMINATING MAGNIFIER**

(75) Inventor: **Wai Hong Chan**, New Territories (HK)

(73) Assignee: **Sunrich Manufactory Ltd.**, Tuen Mun, New Territories (HK)

(**) Term: **14 Years**

(21) Appl. No.: **29/318,149**

(22) Filed: **May 14, 2008**

(51) **LOC (9) Cl.** **26-02**
(52) **U.S. Cl.** **D26/38**; D26/51
(58) **Field of Classification Search** D26/38, D26/37, 46, 51; 362/157, 158, 183, 195, 362/196, 200–208; D16/135
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D196,452	S	*	10/1963	Burlin	D16/135
3,409,343	A	*	11/1968	Walter	359/431
D394,272	S	*	5/1998	Hon	D16/135
D433,170	S	*	10/2000	Chan	D26/38
D439,688	S	*	3/2001	Suzuki	D26/37
D477,432	S	*	7/2003	Parsons	D26/37
D489,384	S	*	5/2004	Chan	D16/135
D553,273	S	*	10/2007	Jim	D26/37
D567,414	S	*	4/2008	Schnell	D26/37

* cited by examiner

Primary Examiner—Ian Simmons
Assistant Examiner—Carissa C Fitts
(74) *Attorney, Agent, or Firm*—Lackenbach Siegel, LLP; Andrew F. Young

(57) **CLAIM**

The ornamental design for an illuminating magnifier, as shown and described.

DESCRIPTION

FIG. **1** is a top plan view of an illuminating Magnifier, showing my new design;

FIG. **2** is a front view of thereof;

FIG. **3** is a left side view thereof;

FIG. **4** is a right side view thereof;

FIG. **5** is a rear view thereof; and,

FIG. **6** is a bottom view thereof.

The two dashed line regions shown in FIG. **6** are for illustration purposes only and form no part of the claimed design.

1 Claim, 3 Drawing Sheets

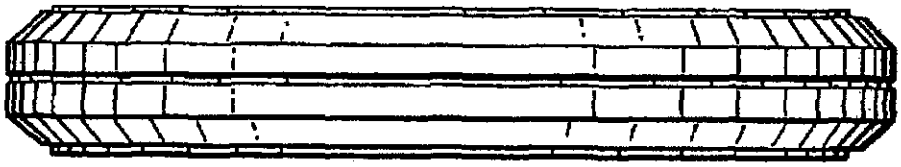


FIG. 1

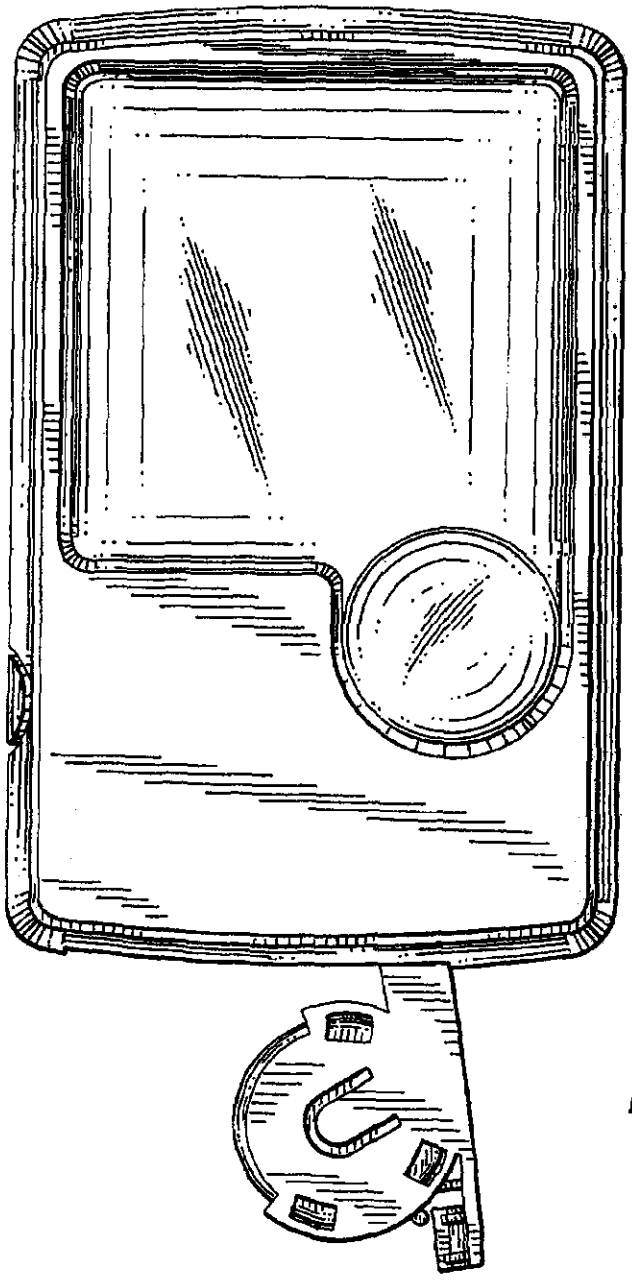
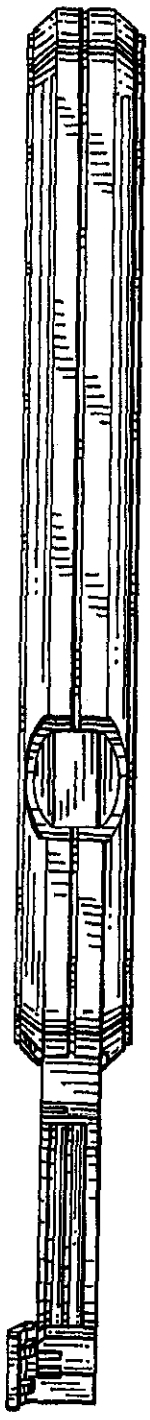


FIG. 2

FIG. 3



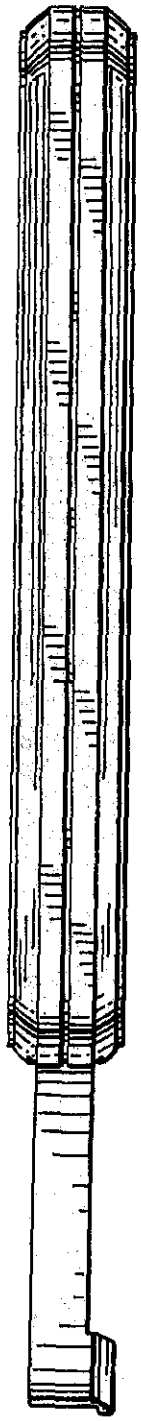
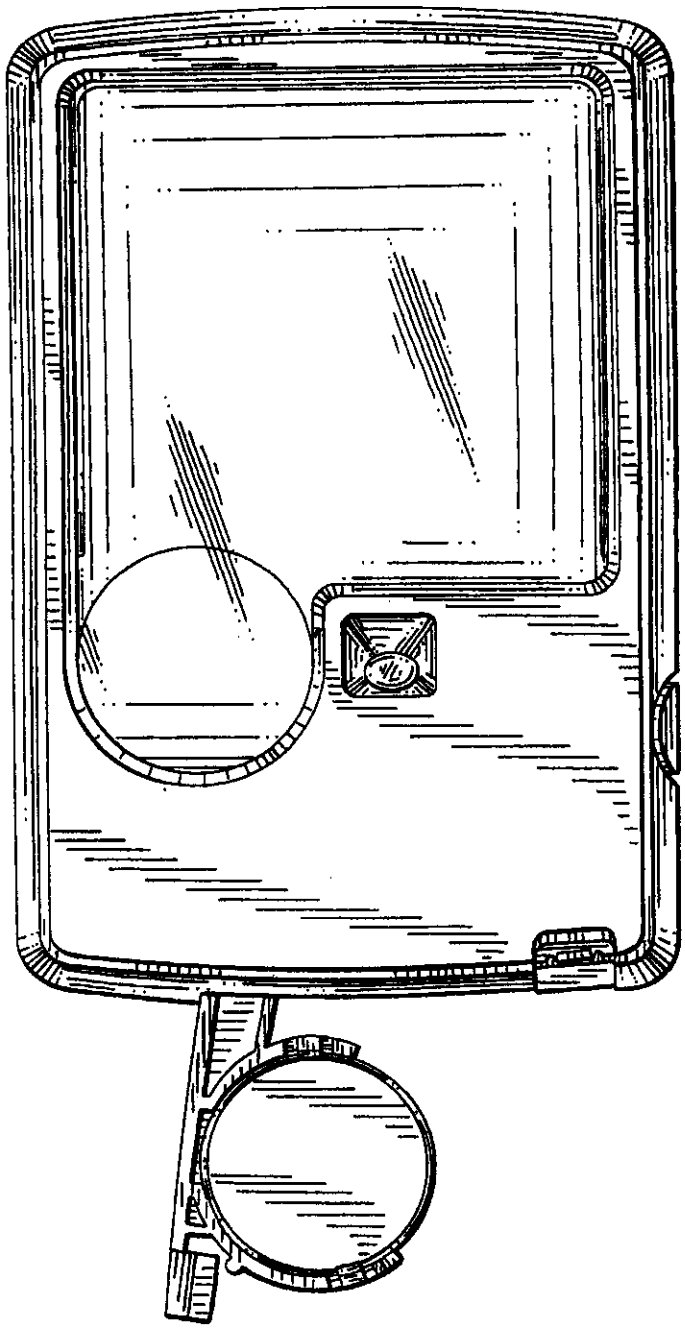


FIG. 4

FIG. 5



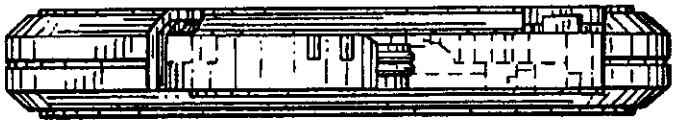


FIG. 6

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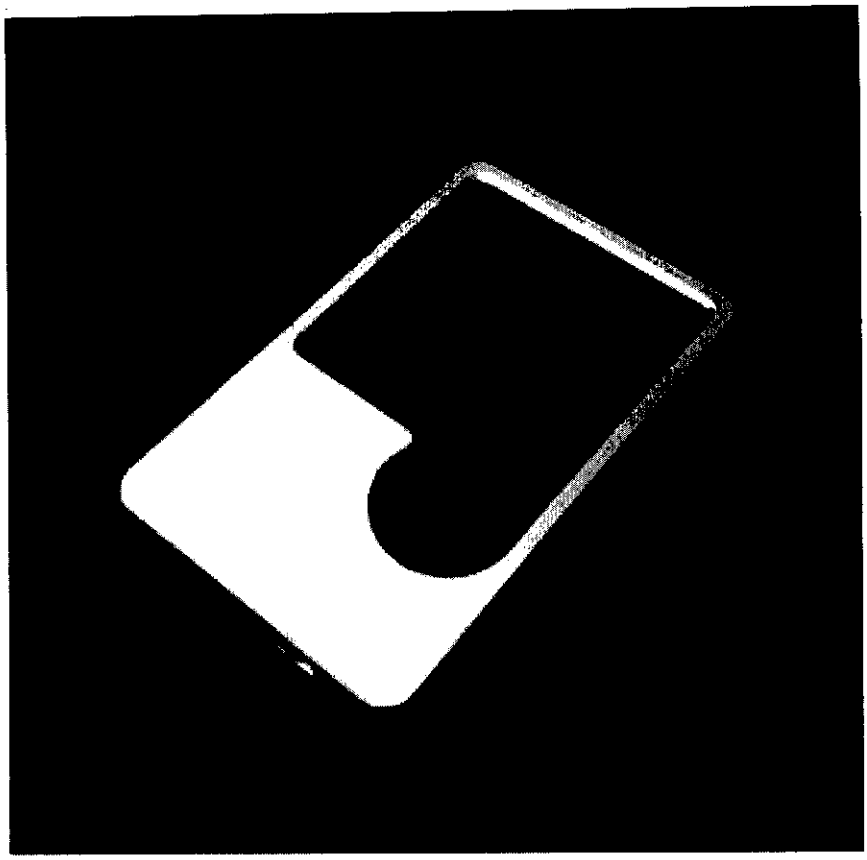

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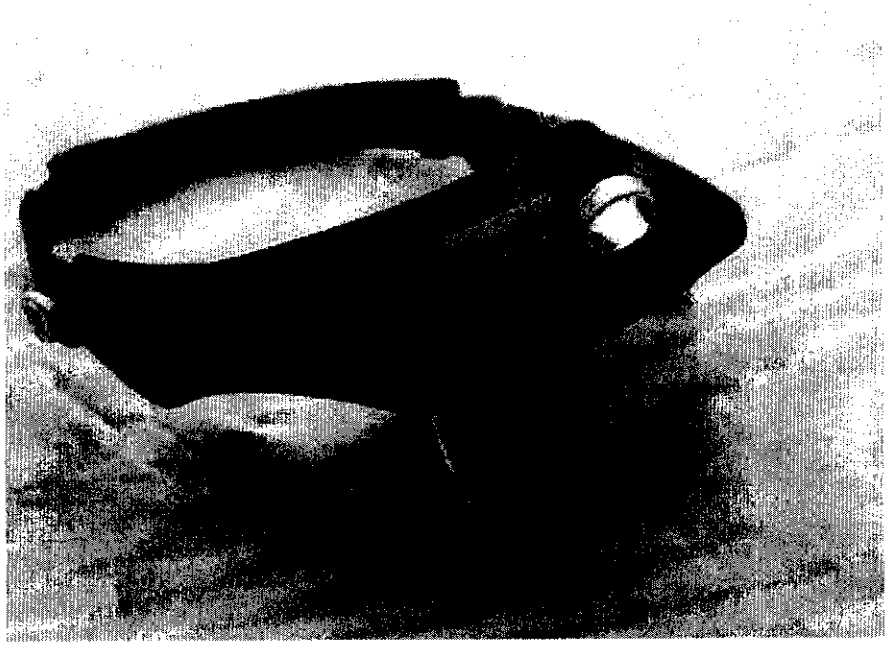

MG7615
5" Dia. Acrylic Lens X 2x Power with 2-LED Light

MG7715
4" X 2" Rectangle 3x Power Illuminated Halogen Bulb (Need 2-C Batteries)

MG7701
3¼" Dia. Deluxe Illuminated 3x Magnifier (Need 2-C Batteries)

MG7711
4½" Dia. Jumbo Illuminated Map Reader 2x (Need 2-C Batteries)

MG7712L-6
6 LED 3" Diameter 2x Power Magnifier (Need 4-AA)

MG7717-L4
3¼" X 3¼" Handheld 4 LED Magnifier 3x; Adjustable Angle Handle; (Need 2-AA)

MG2711L
10x Power X 1½" Dia. Lighted Magnifier (Need 2-C Batteries)

MG846
2½" Dia. X 4x Power Lighted Magnifier

MP7558
3½" Dia. X 2.5x Power Illuminated Magnifier, Power Crank Generating, Mobile Phone Charger

MP7511
2¼" X 2¾" Travel Magnifier 2x, 5x; Ruler, Compass

MG7613
3½" Dia. Aspheric Magnifier, 3x 5x Power w/ LED Light

MG7700
3x Power X 3½" Dia. Desktop Illuminated Magnifier (Need 2-AA)

MG935L
3½" Collector's Illuminated Magnifier 5x (Need 2-AA)

MP7564
3" Round, 3x Illuminated, Turn Handle for ON/OFF (Need 2-AA)

MG845
2¾", 3x LED Light Magnifier (Need 3-AAA)

MG842
2" Dia. X Dual 3x, 5x Power Slim LED Magnifier

MP7543
2" X 4" Rectangular Illuminated Magnifier 2x, 4x (Need 2-AA)

MG742
4" X 2" Illuminated Rectangular Dual Power 2x, 6x (Need 2-AAA)

MG920-LED
10x Power Magnifier w/ LED Light for Repairing Clocks/Watches

MP554-LED
2¼" X 3⅛" Thin Card 3x Power LED Magnifier

MG7541
Rectangular Illuminated Magnifier 3x; 1⅛" X ⅜"; Case Size 2¼" X 3" (Need 2-AAA)

MG7639
1⅛" X 1⅛" Rectangle 3x & 6x Power Magnifier w/ LED Light

MG7638
1¼" X 1⅛" Rectangle 4.5x Power Magnifier w/ LED Light

MG7550-LED
8x Power X 1" Dia. Illuminated Folding Magnifier

MG7562-LED
2" Dia. X 5x Power 2-LED Illuminated Folding Magnifier

• NEW LED • RU[illegible]LUMINATED • POCKET DESKTOP